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ANNUAL CALENDAR

OF

McGILL COLLEGE

AND

UNIVERSITY,

MONTREAL.



FOUNDED UNDER BEQUEST OF THE HON. JAMES McGILL
ERECTED INTO A UNIVERSITY BY ROYAL CHARTER
IN 1821, AND RE-ORGANIZED BY AN
AMENDED CHARTER IN 1852.

SESSION 1886-87.

Montreal:
PRINTED FOR THE UNIVERSITY BY JOHN LOVELL & SON.
1886.

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The *University Lists* of Graduates, Students, &c., and announcement of the School Examinations, will be found in the complete Calendar, which can be had on application to the Secretary.

The *Examination Papers* of the Session 1885–86 are published separately, and may be purchased of the Secretary, or through booksellers.

General Statement.

SESSION OF 1886-7.

The Fifty-fourth Session of the University, being the Thirty-third under the amended Charter, will commence in the Autumn of 1886.

By Virtue of the Royal Charter, granted in 1821 and amended in 1852, the Governors, Principal and Fellows of McGill College constitute the Corporation of the University; and, under the Statutes framed by the Board of Governors, with approval of the Visitor, have the power of granting Degrees in all the Arts and Faculties, in McGill College, and Colleges affiliated thereto.

The Statutes and Regulations of the University have been framed on the most liberal principles, with the view of affording to all classes of persons the greatest possible facilities for the attainment of mental culture and professional training. In its religious character the University is Protestant, but not denominational; and while all possible attention will be given to the character and conduct of students, no interference with their peculiar religious views will be sanctioned.

The educational work of the University is carried on in McGill College, Montreal, and in the Affiliated Colleges and Schools.

I. McGILL COLLEGE.

THE FACULTY OF ARTS.—The complete course of study extends over four Sessions, of eight months each; and includes Classics and Mathematics, Experimental Physics, English Literature, Logic, Mental and Moral Science, Natural Science, and one Modern Language, or Hebrew. The course of study is, with few exceptions, the same for all students in the first two years; but in the third and fourth years extensive options are allowed, more especially in favour of the Honour Courses in Classics, Mathematics, Mental and Moral Science, Natural Science, English Literature and Modern Languages. Certain exemptions are also allowed to professional Students. The course of study leads to the Degrees of B.A., M.A., and LL.D.

THE DONALDA SPECIAL COURSE IN ARTS provides for the education of women, in separate classes, with course of study, exemptions and honours similar to those for men.

THE FACULTY OF APPLIED SCIENCE provides a thorough professional training, extending over three or four years, in Civil Engineering, Mechanical Engineering, Mining Engineering and Assaying, and Practical Chemistry, leading to the Degrees of Bachelor of Applied Science, Master of Engineering, and Master of Applied Science.

THE FACULTY OF MEDICINE.—The complete course of study in Medicine extends over four Sessions, of six months each, and one Summer Session of three months in the 3rd Academic Year, and leads to the Degree of M.D., C.M.

THE FACULTY OF LAW.—The complete course in Law extends over three Sessions of six months each, and leads to the Degrees of B.C.L. and D.C.L.

II. AFFILIATED COLLEGES.

Students of Affiliated Colleges are matriculated in the University, and may pursue their course of study wholly in the Affiliated College, or in part in McGill College, and may come up to the University Examinations on the same terms with the Students of McGill College.

MORRIN COLLEGE, *Quebec*—Is affiliated in so far as regards Degrees in Arts and Law.

[Detailed information may be obtained from Rev. John Cook, D.D., Principal.]

ST. FRANCIS COLLEGE, *Richmond*—Is affiliated in so far as regards the Intermediate Examinations in Arts.

[Detailed information may be obtained from Principal Bannister, B.A., Richmond, P.Q.]

III. AFFILIATED THEOLOGICAL COLLEGES.

Affiliated Theological Colleges have the right of obtaining for their Students the advantage, in whole or in part, of the course of study in Arts, with such facilities in regard to exemptions as may be agreed on.

THE CONGREGATIONAL COLLEGE OF BRITISH NORTH AMERICA, *Montreal.*

THE PRESBYTERIAN COLLEGE, MONTREAL, in connection with the Presbyterian Church in Canada.

THE DIOCESAN COLLEGE OF MONTREAL.

THE WESLEYAN COLLEGE OF MONTREAL.

IV. AFFILIATED SCHOOLS.

THE MCGILL NORMAL SCHOOL provides the training requisite for Teachers of Elementary and Model Schools and Academies. Teachers trained in this School are entitled to Provincial Diplomas.

THE MODEL SCHOOLS OF THE MCGILL NORMAL SCHOOL are Elementary Schools, divided into a Boys' Department, Girls' Department, and Primary School.

COLLEGIATE INSTITUTES, ACADEMIES, and HIGH SCHOOLS may be affiliated in so far as regards Matriculation in Arts and Applied Science, under the University regulations. The following are at present so recognized :—

Prince of Wales College, Charlottetown, P.E.I.; Collegiate Institute, Hamilton, Ont.; Canadian Literary Institute, Woodstock, Ont.; High School, Montreal; Bishop's College School, Lennoxville; Girls' High School, Montreal; Lachute Academy; Knowlton Academy; Waterloo Academy; Lincoln College, Sorel; Cowansville Academy; Hawkesbury High School; Charleston Academy, Hatley; High School, New Westminster, B.C.

BENEFACTORS OF

McGill University, Montreal.

I. ORIGINAL ENDOWMENT, 1811.

THE HONOURABLE JAMES McGILL, who was born at Glasgow, 6th Oct., 1744, and died at Montreal, 19th Dec., 1813, by his last will and testament, under date 8th January, 1811, devised the Estate of Burnside, situated near the City of Montreal, and containing forty-seven acres of land, with the Manor House and Buildings thereon erected, and also bequeathed the sum of ten thousand pounds in money, unto the "Royal Institution for the Advancement of Learning," a Corporation constituted in virtue of an Act of Parliament passed in the Forty-first Year of the Reign of His Majesty, King George the Third, to erect and establish a University or College for the purpose of Education and the advancement of learning in the Province of Lower Canada, with a competent number of Professors and Teachers to render such Establishment effectual and beneficial for the purposes intended; requiring that one of the Colleges to be comprised in the said University should be named and perpetually be known and distinguished by the appellation of "McGill College."

The value of the above-mentioned property was estimated at the date of the bequest at $120,000

II. UNIVERSITY BUILDINGS.

THE WILLIAM MOLSON HALL, being the west wing of the McGill College buildings, with the Museum Rooms, and the Chemical Laboratory and Class Rooms was erected in 1861, through the munificent donation of the founder, whose name it bears.

THE PETER REDPATH MUSEUM, the gift of the donor whose name it bears, was announced by him as a donation to the University in 1880, and was formally opened to the public, August, 1882.

III. THE DONALDA ENDOWMENT FOR THE HIGHER EDUCATION OF WOMEN.

This endowment, given by the Honorable Donald A. Smith of Montreal, is for the education of women in the subjects of the Faculty of Arts up to the standard of the examination for B. A., in classes wholly separate, to constitute a separate Special Course or College for women,—$120,000.

IV. ENDOWED CHAIRS.

THE MOLSON CHAIR OF ENGLISH LANGUAGE AND LITERATURE, in 1856, by the Honorable John Molson, Thomas Molson, Esq., and William Molson, Esq., —$20,000.

THE PETER REDPATH CHAIR OF NATURAL PHILOSOPHY, in 1871, by Peter Redpath, Esq.,—$20,000.

THE LOGAN CHAIR OF GEOLOGY, in 1871, by Sir W. E. Logan, LL.D., F.R.S., and Hart Logan, Esq., -$20,000.

THE JOHN FROTHINGHAM CHAIR OF MENTAL AND MORAL PHILOSOPHY, in 1873, by Miss Louisa Frothingham,—$20,000.

THE WILLIAM SCOTT CHAIR OF CIVIL ENGINEERING, in 1884, endowed by the last will of the late Miss Barbara Scott, of Montreal,—$30,000.

THE MAJOR HIRAM MILLS CHAIR OF CLASSICS, in 1882, endowed by the last will of the late Major Hiram Mills of Montreal,—$42,000.

THE DAVID J. GREENSHIELDS CHAIR OF CHEMISTRY AND MINERALOGY, in the Faculties of Arts and Applied Science, in 1883, endowed by the last will of the late David J. Greenshields, Esq., of Montreal,—$40,000.

THE GALE CHAIR, in the Faculty of Law, endowed by the late Mrs. Andrew Stuart (née Agnes Logan Gale), of Montreal, in memory of her father, the late Honorable Mr. Justice Gale,—$25,000; part received, May, 1884.

V. EXHIBITIONS AND SCHOLARSHIPS.

THE JANE REDPATH EXHIBITION, in the Faculty of Arts, $100 annually—founded in 1868 by Mrs. Redpath of Terrace Bank, Montreal, and endowed with the sum of $1,667.

THE MCDONALD SCHOLARSHIPS AND EXHIBITIONS, 10 in number, in the Faculty of Arts—founded in 1871, and endowed with the sum of $25,000, in 1882, by William C. McDonald, Esq.—Annual value, $1,250.

THE CHARLES ALEXANDER SCHOLARSHIP, for Classics—founded in 1871, by Charles Alexander, Esq.—Annual value, $120.

THE TAYLOR SCHOLARSHIP—founded in 1871, by T. M. Taylor, Esq.—Annual value, $100—terminated in 1878.

THE SCOTT EXHIBITION—founded by the Caledonian Society of Montreal in commemoration of the Centenary of Sir Walter Scott, and endowed in 1872 with the sum of $1,100 subscribed by members of the Society, and other citizens of Montreal. The Exhibition is given annually in the Faculty of Applied Science. Annual value $60.

THE BARBARA SCOTT SCHOLARSHIP FOR CLASSICAL LANGUAGES AND LITERATURE—founded by the last will of the late Miss Barbara Scott of Montreal, in the sum of $2,000:—in 1884. Annual value, $100.

THE DAVID MORRICE SCHOLARSHIP—in the subject of Institutes of Medicine, in the Faculty of Medicine—founded in 1881—value $100.

THE GEORGE HAGUE EXHIBITION—founded in 1881 in the Faculty of Arts, for the term of four years, value $125.

THE BURLAND SCHOLARSHIP—founded 1879, by J. H. BURLAND, ESQ., $100 for a Scholarship in Applied Science, for three years, being $300.

THE MAJOR HIRAM MILLS MEDAL AND SCHOLARSHIP—in the Faculty of Arts, founded by the will of the late Major Hiram Mills of Montreal, and endowed with the sum of $1,500.—Annual value $75.

VI. ENDOWMENTS OF MEDALS AND PRIZES.

In 1856 Henry Chapman, Esq., founded a gold medal, to be named the "Henry Chapman Gold Medal," to be given annually in the graduating class in Arts. This Medal was endowed by Mr. Chapman in 1874, with the sum of $700.

In 1860 the sum of £200, presented to the College by H. R. H. the Prince of Wales, was applied to the foundation of a Gold Medal, to be called the "Prince of Wales Gold Medal," which is given in the graduating class for Honour Studies in Mental and Moral Philosophy.

In 1864 the "Anne Molson Gold Medal" was founded and endowed by Mrs. John Molson of Belmont Hall, Montreal, for an Honour Course in Mathematics and Physical Science.

In the same year the "Shakespeare Gold Medal," for an Honour Course to comprise and include the works of Shakespeare and the Literature of England from his time to the time of Addison, both inclusive, and such other accessory subjects as the Corporation may from time to time appoint—was founded and endowed by citizens of Montreal, on occasion of the three hundredth anniversary of the birth of Shakespeare.

In the same year the "Logan Gold Medal," for an Honour Course in Geology and Natural Science, was founded and endowed by Sir William Logan, LL.D., F.R.S., F.G.S., &c.

In 1865 the "Elizabeth Torrance Gold Medal" was founded and endowed by John Torrance, Esq., of St. Antoine Hall, Montreal, in memory of the late Mrs. John Torrance, for the best student in the graduating class in Law, and more especially for the highest proficiency in Roman Law.

In the same year the "Holmes Gold Medal" was founded by the Medical Faculty, as a memorial of the late Andrew Holmes, Esq., M.D., LL.D., late Dean of the Faculty of Medicine, to be given to the best student in the graduating class in Medicine who shall undergo a special examination in all the branches, whether Primary or Final.

In 1874 a Gold and Silver Medal were given by his Excellency the Earl of Dufferin, Governor General of Canada, for competition in the Faculty of Arts, and continued till 1878.

In 1878 the "Sutherland Gold Medal" was founded by Mrs. Sutherland of Montreal, in memory of her late husband, Prof. William Sutherland, M.D., for competition in the classes of Theoretical and Practical Chemistry in the Faculty of Medicine, together with creditable standing in the Primary Examinations.

In 1875 the "Neil Stewart prize of $20 in Hebrew" was endowed by Neil Stewart, Esq., of Vankleek Hill, in the sum of $340.

In 1880 a Gold and Silver Medal were given by His Excellency the Marquis of Lorne, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science ; continued till 1883.

In 1883 a Gold, Silver and Bronze Medal were given by R. J. Wicksteed, Esq., M.A., LL.D., for competition in "Physical Culture" by Students in the Graduating Class and 2nd and 3rd years who have attended the University Gymnasium.

In 1884 a Gold and a Silver Medal were given by His Excellency the Marquis of Lansdowne, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science.

In 1885 the British Association Gold Medal for competition in the graduating class in the Faculty of Applied Science, was founded by subscription of members of the British Association for the Advancement of Science, and by gift of the council of the Association, in commemoration of its meeting in Montreal in the year 1884.

VII. SUBSCRIPTIONS TO THE GENERAL ENDOWMENT.

1856.

John Gordon McKenzie, Esq.	$2000	Charles Alexander, Esq.	$600
Ira Gould, Esq.	2000	Moses E. David, Esq.	600
John Frothingham, Esq.	2000	Wm. Carter, Esq.	600
John Torrance, Esq.	2000	Thomas Patton, Esq.	600
James B. Greenshields, Esq.	1200	Wm. Workman, Esq.	600
William Busby Lambe, Esq.	1200	Honourable Sir A. T. Gault.	600
Sir George Simpson, Knight.	1000	Honourable Luther H. Holton.	600
Henry Thomas, Esq.	1000	Henry Lyman, Esq.	600
John Redpath, Esq.	1000	David Torrance, Esq.	600
James McDougall, Esq.	1000	Edwin Atwater, Esq.	600
James Torrance, Esq.	1000	Theodore Hart, Esq.	600
Honourable James Ferrier	1000	William Forsyth Grant, Esq.	600
Harrison Stephens, Esq.	1000	Robert Campbell, Esq.	600
Henry Chapman, Esq.	600	Alfred Savage, Esq.	600
Honourable Peter McGill	600	James Ferrier, Jun., Esq.	600
John James Day, Esq.	600	William Stephen, Esq.	600
Thomas Brown Anderson, Esq.	600	N. S. Whitney, Esq.	600
Peter Redpath, Esq.	600	William Dow, Esq.	600
Thomas M. Taylor, Esq.	600	William Watson, Esq.	600
Joseph McKay, Esq.	600	Edward Major, Esq.	600
Donald Lorn McDougall, Esq.	600	Honourable Charles Dewey Day.	200
Honourable Sir John Rose.	600	John R. Esdaile, Esq.	200

1871.

William Molson, Esq.	$5000	T. W. Ritchie, Esq.	$600
William C. McDonald, Esq.	5000	Messrs. A. & W. Robertson.	600
Thomas Workman, Esq.	5000	Messrs. Sinclair, Jack & Co.	250
John Frothingham, Esq.	5000	John Reddy, Esq., M.D.	100
J. H. R. Molson, Esq.	5000	Wm. Lunn, Esq.	100
John McLennan, Esq.	2000	Kenneth Campbell, Esq.	100
B. Gibb, Esq.	600	R. A. Ramsay, Esq.	100
W. Notman, Esq.	600	William Rose, Esq.	50

1881-82.

Hugh McLennan, Esq.	$5000	O. S. Wood, Esq.	$1000
G. A. Drummond, Esq.	4000	J. S. McLachlan, Esq.	1000
George Hague, Esq.	3000	J. B. Greenshields, Esq., (London)	1000
M. H. Gault, Esq.	2000	Warden King, Esq.	1000
Andrew Robertson, Esq.	1000	W. B. Cumming	1000
Robert Campbell, Esq.	1000	Mrs. Hew Ramsay	500
J. Hickson, Esq., & Mrs. Hickson	1000	R. A. Ramsay, Esq.	500
Mrs. Andrew Dow	1000	H. H. Wood, Esq.	500
Alexander Murray, Esq.	1000	James Burnett, Esq.	500
Miss Orkney	1000	Charles Gibb, Esq.	500
Hector MacKenzie, Esq.	1000		

1883-84.

Edward Mackay, Esq. $5000

VIII. SUBSCRIPTIONS FOR CURRENT EXPENSES IN 1881-82.

Principal Dawson	$1000	Being	$1000
J. H. R. Molson, Esq	1000	Per annum, 5 years being	5000
George Stephen, Esq	1000	" " "	5000
Hon. Donald A. Smith	1000	" " "	5000
David Morrice, Esq	200	" " "	1000
Messrs. Gault Brothers & Co.	200	" " "	1000
Messrs. A. S. & S. H. Ewing.	200	" " "	1000
Hon. Robert Mackay	300	Per annum, 2 years, being	600
Jonathan Hodgson, Esq	100	Per annum, 5 years, being	500
Geo. M. Kinghorn, Esq	100	" " "	500
Thomas Craig, Esq	100	Per annum, 2 years, being	200
John Rankin, Esq	200	Being	200
John Duncan, Esq	200	"	200
Robert Benny, Esq	100	"	100
Miss E. A. Ramsay	100	"	100
Hugh Paton, Esq	50	For 2 years, being	100
George Brush, Esq	25	For 5 years, being	125
J. M. Douglas, Esq	50	Being	50
James Court, Esq	50	"	50
David J. Greenshields, Esq.	300	"	300

IX. ENDOWMENT FOR FACULTY OF APPLIED SCIENCE.

1871.

Daniel Torrance, Esq	$5000
George Moffatt, Esq	1000
Charles J. Brydges, Esq	1000

X. ANNUAL SUBSCRIPTIONS IN AID OF THE FACULTY OF APPLIED SCIENCE.

1871.

Hon. James Ferrier (per annum, for 10 years)	$100
Peter Redpath, Esq (per annum, for 10 years)	400
John H. R. Molson, Esq. (per annum, for 10 years)	400
George H. Frothingham, Esq. (per annum, for 7 years)	400
T. James Claxton, Esq. (per annum, for 6 years)	100
Donald Ross, Esq. (per annum, for 5 years)	50

1878-79.

Miss Mary Frothingham (per annum, for 3 years)	$400
H. McLennan, Esq. (per annum, for 5 years)	100
A. F. Gault, Esq., do do	100
Gilbert Scott, Esq., for 2 years	100
Joseph Hickson, Esq., do	100
Principal Dawson, do	300
His Excellency the Marquis of Lorne	500
Mrs. Redpath (Terrace Bank)	100

1882-83.

To provide assistance in Mechanical Engineering.

E. B. Greenshields, Esq	$50
J. E. Bovey, Esq	50
Professor H. T. Bovey	61
Smaller amounts	40

XI. SUBSCRIPTIONS FOR SPECIAL OBJECTS.

1883-84.

Subscriptions for the support of the Chair of Botany.

Principal Dawson	$500	Per annum,	5	years, being	$2500
Hon. D. A. Smith	250	"	"	"	1200
J. H. R. Molson, Esq	100	"	"	"	500
Mrs. J. H. R. Molson	100	"	"	"	500
G. Hague, Esq	100	"	"	"	500
Mrs. Redpath	100	"	"	"	500
Hugh Mackay, Esq	100	"	"	"	500
Robert Moat, Esq	100	"	"	"	500
W. C. McDonald, Esq	100	"	"	"	500
Charles Gibb, Esq	50	"	"	"	250
Miss Orkney	50	"	"	"	250
Robert McKay, Esq	50	"	"	"	250
Mrs. Molson	50	"	"	"	250
Mrs. John Molson	50	"	"	"	250
John Stirling, Esq	50	"	"	"	250
Warden King, Esq	50	"	"	"	250
Miss Hall	50	"	"	"	250
Robert Angus, Esq	50	"	"	"	250
D. A. P. Watt, Esq	50	"	"	"	150
Hugh McLennan, Esq	25	"	"	"	50
Joseph Hickson, Esq	10				10
Mrs. Phillips					

Subscriptions for the purchase of Philosophical Apparatus, 1867.

William Molson, Esq	$500	John Frothingham, Esq	$100
John H. R. Molson, Esq	500	David Torrance, Esq	100
Peter Redpath, Esq	500		
George Moffatt, Esq	250		$2,050
Andrew Robertson, Esq	100		

Subscriptions for the erection of a fire-proof Building for the Carpenter Collection of Shells, 1868.

Peter Redpath, Esq	$500	Wm. Dow, Esq	$100
William Molson, Esq	500	Thomas Rimmer, Esq	100
Harrison Stephens, Esq	100	Andrew Robertson, Esq	100
Robert J. Reekie, Esq	100	Mrs. Redpath	100
John H. R. Molson, Esq	100	Benaiah Gibb, Esq	50
Sir William E. Logan, F.R.S	100	Honourable John Rose	50
John Molson, Esq	100		
Thos. Workman, Esq., M.P	100		$2,180
Geo. H. Frothingham, Esq	100		

Subscriptions for the erection of the Lodge and Gates.

William Molson, Esq	$100	James A. Mathewson, Esq	$100
John H. R. Molson, Esq	100	Peter Redpath, Esq	100
William Workman, Esq	100	G. H. Frothingham, Esq	100
Joseph Tiffin, Jr., Esq	100	G. D. Ferrier, Esq	100
Thos. J. Claxton, Esq	100	Geo. W. Warner, Esq	100
James Linton, Esq	100	John Smith, Esq	100
William McDougall, Esq	100	Charles Alexander, Esq	100
Charles J. Brydges, Esq	100	J. Evans, Esq	100
George Drummond, Esq	100	Henry Lyman, Esq	100
Thomas Rimmer, Esq	100		
William Dow, Esq	100		$2,100
John Frothingham, Esq	100		

Subscriptions for the internal fittings of the Library and Museum of the Faculty of Medicine, 1872.

G. W. Campbell, A.M., M.D.	$1200	Robert Craik, M.D	200
Wm. E. Scott, M.D	200	Geo. E. Fenwick, M.D	200
Wm. Wright, M.D.....	200	Joseph M. Drake, M.D.....	200
Robert P. Howard, M.D.....	200	George Ross, M.A., M.D.....	50
Duncan C. McCallum, M.D...	200		

Subscriptions for Library and Museum.

John Thorburn, for purchase of Books.....	$90	A Lady for Museum Expenses, in 1882	100
Andrew Drummond, do for Applied Science	25	A Lady, for Museum Expenses, in 1883–4	2000
T. J. Claxton, Esq., for purchase of Specimens for Museum....	250	Peter Redpath, Esq., for Museum Expenses, 1882, $1000; 1883, 1,000; 1884, 1,000 1885 $1000	4000
Mrs. H. G. Frothingham, for the arrangement of Dr. Carpenter's Collection of Mazatlan shells.	233	A Friend for the purchase of specimens for the Museum ...	1000
		Further from the same	400

Subscriptions for Apparatus.

A Lady for the purchase of Mining Models.....	$1000
Thos. McDougall, Esq., for the same	25
J. Livesey, Esq., through Dr. Harrington, for the same.	50
George Stephen, Esq., for the same.....	50
Charles Gibb, B.A., donation for Apparatus in Applied Science.....	50
Andrew Drummond, Esq., to Library Fund of Faculty of Applied Science.	25
A Telescope and Astronomical Instruments, the gift of Charles T. Blackman, Esquire, of Montreal, and called after his name.	
The Local Committee for the reception (1881) of American Society of Civil Engineers..... For the purchase of appliances for the department of Civil Engineering in Faculty of Applied Science	475
Capt. Adams, Chemical Apparatus	10
J. H. Burland, B.A. Sc., Chemical Apparatus	25

Subscriptions for Physiological Laboratory of Medical Faculty, 1879.

Dr. Campbell..... ..	$100	Dr. Ross.....	$50
Dr. Howard.....	100	Dr. Roddick.....	50
Dr. Craik	100	Dr. Buller	50
Dr. McCallum	100	Dr. Gardner	50
Dr. Drake.....	100	Dr. Osler	50
Dr. Godfrey	100		$ 950
Dr. McEachran, F.R.C.V.S.....	100		

Miscellaneous.

Hon. C. Dunkin, M.P., in aid of the chair of Practical Chemistry	$1200	T. M. Thompson, Esq., $250 for two Exhibitions in September, 1871; $200 for two Exhibitions in 1872	$450
Principal Dawson, in aid of the same.....	1200	Rev. Colin C. Stewart, for the "Stewart Prize in Hebrew." (Terminated in 1875).	60
P. Redpath, Esq., do do.....	226		

R. A. Ramsay, M.A., B.C.L., to defray the expenses of re-erecting the tomb of the late Hon. James McGill.....$150 00

XII. LIBRARY, MUSEUM AND APPARATUS FUNDS.

Wm. Molson, Esq., for Library Fund	$4000
Wm. Molson, Esq., for Museum Fund	2000
Hon. F. W. Torrance, Mental and Moral Philosophy Book Fund	1000
Mrs. Redpath, for the endowment of the Wm. Wood Redpath Library Fund	1000
A Friend by the Hon. F. W. Torrance	400
The Local Committee of the British Association for the Advancement of Science, to found the British Association Apparatus Fund in the Faculties of Arts and Applied Science, in commemoration of the meeting of the Association in Montreal in 1884	1500

XIII. ENDOWMENT, HELD IN TRUST BY THE BOARD OF ROYAL INSTITUTION.

The "Hannah Willard Lyman Memorial Fund," contributed by subscription of former pupils of Miss Lyman, and invested as a permanent endowment, to furnish annually a Scholarship or Prize in a "College for Women" affiliated to the University; or in classes for the Higher Education of Women approved by the University. The amount of the fund is at present $1,100.

XIV. SPECIAL COLLECTIONS OF BOOKS PRESENTED TO THE LIBRARY.

1. The Peter Redpath Collection of Historical Books—presented by Peter Redpath, Esq., of Montreal, 2272 Volumes.

2. The Robson Collection of works in Archæology and general Literature, presented by Dr. John Robson of Warrington, England, 3436 Volumes.

3. The Charles Alexander Collection of Classical Works presented by C. Alexander, Esq., of Montreal, 221 Volumes.

4. Frederick Griffin, Esq., Q.C., Collection of Books, being the whole of his Library, bequeathed by his will, 2692 Volumes.

5. The Hon. Mr. Justice McKay, Collections of Books, being the whole of his Library, 2007 volumes.

6. The "T. D. King Shakespeare Collection," presented by the Hon. Donald A. Smith and W. C. MacDonald, Esq., of Montreal, being 214 Volumes.

XV. SPECIAL COLLECTIONS PRESENTED TO THE MUSEUM.

1. The Holmes Herbarium—presented by the late Andrew F. Holmes, M.D.

2. The Carpenter Collection of Shells—presented by the late P. P. Carpenter, Ph. D.

3. The Collection of Casts of Ivory Carvings issued by the Arundel Society——presented by Henry Chapman, Esq.

4. The McCulloch Collection of Birds and Mammals, collected by the late Dr. M. McCulloch, of Montreal and presented by his heirs.

5. The Logan Memorial Collections of Specimens in Geology and Natural History, presented by the heirs of the late Sir W. E. Logan, LL.D., F.R.S.

6. The Dawson Collection in Geology and Palæontology, being the Private Collections of Principal Dawson, presented by him to the Museum.

7. The Portrait of Peter Redpath, Esq., painted by Mr. Sidney Hodges of London, and presented by Citizens of Montreal.

(See also "List of Donations to the Library and Museum," printed annually in the Calendar and Report of the Museum.)

XVI. ENDOWMENTS OF THE FACULTY OF MEDICINE.

I. Lean Choil Endowment.

Honorable Donald A. Smith $50,000

II. Campbell Memorial Endowment.

Established to commemorate the services rendered to the Faculty during forty years by the late Dean, George W. Campbell, M.D., LL.D.

Mrs. G. W. Campbell	$2000	John Rankin, Esq	500
H. A. Allan	1500	Cantlie, Ewan & Co	500
Hon. D. A. Smith	1500	Robt. Reford	500
George Stephen, Esq	1000	J. & W. Ogilvie	500
R. B. Angus, Esq	1000	Randolph Hersey, Esq	500
George Drummond, Esq	1000	John A. Pillow, Esq	500
Alex. Murray, Esq	1000	S. Carsley, Esq	500
Robt. Moat, Esq	1000	D. C. McCallum, M.D	500
W. C. McDonald, Esq	1000	McLachlan Bros	500
A Friend	1000	S. Greenshields, Son & Co	500
Duncan McIntyre, Esq	1000	Jonathan Hodgson, Esq	500
Alex. Buntin, Esq	1000	Duncan McEachran, Esq., F.R.C.V.S	500
A. F. Gault, Esq	1000	Geo. Ross, M.D	500
M. H. Gault, Esq	1000	T. G. Roddick, M.D	500
G. W. Stephens, Esq	1000	Wm. Gardner, M.D	500
James Benning, Esq	1000	G. P. Girdwood, M.D	500
R. P. Howard, M.D	1000	G. E. Fenwick, M.D	500
Frank Buller, M.D	1000	Alex. Ramsay, Esq	500
G. B. & J. H. Burland, Esqrs	1000	Cochrane, Cassils & Co	500
Miss Elizabeth C. Benny	1000	Joseph Hickson, Esq	500
J. C. Wilson, Esq	1000	Allan Gilmour (Ottawa)	500
Mrs. John Redpath	1000	R. W. Shepherd, Esq	500
Hon. John Hamilton	1000	Miles Williams, Esq	300
Miss Orkney	1000	Chas. F. Smithers, Esq	250
Hugh McKay, Esq	1000	John Kerry, Esq	250
Hector McKenzie, Esq	1000	A. Baumgarten, Esq	250
Thomas Workman, Esq	1000	V. R. Elmenhorst, Esq	250
Hugh McLellan, Esq	1000	W. F. Lewis, Esq	250
O. S. Wood, Esq	1000	Geo. Armstrong, Esq	250
James Burnett, Esq	500	J. M. Douglas, Esq	250
Andrew Robertson, Esq	500	H. Lyman, Sons & Co	250
Robt. McKay, Esq	500	William Osler, M.D	250
John Hope, Esq	500	F. J. Shepherd, M.D	250
Alex. Urquhart, Esq	500	Benj. Dawson, Esq	200
E. K. & G. A. Greene, Esqs	500	R. Wolff, Esq	150
R. A. Smith, Esq	500	James Stuart, M.D	150
Geo. Hague, Esq	500	Mrs. Cuthbert (New Richmond, Q)	100
J. K. Ward, Esq	500	J. M. Drake, M.D	100
Warden King, Esq	500		
John Sterling, Esq	500		

H. W. Thornton, M.D, (New Richmond, Q.)	$ 100
A. T. Paterson, Esq	100
M. E. David, Esq	100
C. B. Hanvey, M D., (Yale, B.C)	100
D. Cluness, M.D., (Nanaimo, B.C)	100
W. Kinloch, Esq	100
Hua & Richardson	100
Hugh Paton, Esq	100
R. T. Godfrey, M.D	100
T. A. Rodger, M.D	100
W. A. Dyer, Esq	100
G. W. Wood, M.D., (Faribault, Min)	100
A. A. Browne, M.D	100
George Wilkins, M.D	100
Joseph Workman, M.D., (Toronto)	50
Henry Luman, B.A., M.D., Campbellton, N.B	50
Griffith Evans, M.D., (Vet. Dept. Army)	25
J. J. Farley, M.D., (Belleville)	25
Henry R. Gray, Esq	25
Louis T. Marceau, M.D., (Napierville, Q)	$ 25
R. J. B. Howard, M.D	25
T. J. Alloway, M.D	25
R. F. Rinfret, (Quebec)	20
Robt. Howard, M.D., (St. Johns)	20
Dr. J. & D. J. McIntosh, (Vankleek Hill	20
J. E. Brouse, M.D., (Prescott)	20
J. H. McBean, M.D	15
J. C. Rattray, M.D	20
J. H. Howard, M.D., (Lachine)	10
J. W. Oliver, M.D., (Clifton, O)	10
D. A. McDougall, M.D., (Ottawa O)	10
A. Pousette, M.D., (Sarnia, O)	10
A. Ruttan, M.D., (Napanee, O)	10
James Gun, M.D., (Durham, O)	10
J. McDiarmid, M.D	5
W. J. Derby, M.D	5
J. Gillies, M.D	5
J. B. Benson, M.D	5
L. A. Fortier, M.D	5
J. A. McArthur, M.D	5
John Campbell, M.D., (Seaforth, O)	5

THE GRADUATES' FUNDS.

THE FUND FOR ENDOWMENT OF THE LIBRARY.

The Graduates' Society of the University, in 1876, passed the following Resolution :—

"*Resolved*:—"That the members and graduates be invited to subscribe to "a fund for the endowment of the Libraries of the University; said fund to be "invested and the proceeds applied under the supervision of the Council of the "Society in annual additions to the Libraries; an equitable division of said pro- "ceeds to be made by the Council between the University Library and those of "The Professional Faculties."

(In terms thereof the following subscriptions have been announced to date May 1st, 1883,) they are payable in one sum, or in instalments as subscribers have elected.

Alphabetically Arranged.

Baynes, O'Hara, B.C.L	$ 50
Bethune, M.B., M.A., B.C.L	50
Blackader, Alex. D., B.A., M.D	50
Burland, J. H., B. App. Sc	120
Browne, A.A., B.A., M.D	50
Cline, J. D., B.A., M.D	25
Cushing, Lemuel, LL.D, B.C.L	25
Dougall, J. R., M.A	50
Ells, R. W., M.A	50
Empson, Rev. J., M.A	25
Gardner, Wm., M.D	100
Gibb, Charles, B.A	50
Gilman, F. E., LL.D., B.C.L	100
Gould, C. H., B.A	100

Hall, J. S., Jr., B.A., B.C.L.	50
Hall, Rev. W., M.A.	10
Harrington, B. J., B.A., Ph. D.	50
Holton, Edward, B.C.L.	100
Hutchinson, M., B.C.L.	5
Keller, F. J., B.C.L.	25
Kelley, F. W., B.A., Ph.D.	100
Laing, Rev. R., M.A.	100
Lyman, F. S., B.A., B.C.L.	50
Lyman, H. H., M.A.	100
Molson, Wm. M.D.	100
MacKenzie, Fred., B.C.L.	100
Maclaren, J. J., M.A., B.C.L.	100
McCord, D. R., M.A., B.C.L.	100
McGregor, James, LL.D	80
Macleod, C. H., Ma. E.	50
Macmaster, D., B.C.L.	100
Marler, Wm. DeM., B.A., B.C.L.	125
Osler, Wm., M.D	100
Ramsay, R. A. M.A., B.C.L.	100
Rexford, Rev. E. I., B.A.	50
Robertson, Alex., B.A.	100
Robins, S. P., LL.D	50
Roddick, T. G., M.D	100
Ross, George, M.A., M.D.	100
Shepherd, J. F., M.D	100
Torrance, J. F., B.A., B. A. Sc.	100
Trenholme, N. W., M.A., B.C.L.	100
Total to date	$3,090

THE DAWSON PRINCIPALSHIP FOUNDATION.

The Graduates' Society of the University, in 1880, and in commemoration of the completion by Dr. Dawson of his twenty-fifth year as Principal, resolved to raise, with the assistance of their friends, a Fund towards the Endowment of the Principalship, under the above name.

Details of the scheme can be had from the Treasurer, Wm. Molson, Esq., M.D. The following subscriptions have been announced to date May 1st, 1883. They are payable in one sum, in instalments, without interest, or with interest till payment of capital, as subscribers have elected.

Alphabetically Arranged.

Abbott, H., B.C.L.	$ 60
Archibald, H., B. A. Sc.	20
Bethune, M. B., M.A., B.C.L.	50
Carter, C. B., B.C.L.	100
Cruickshank, W. G., B.C.L.	100
Dougall, J. R., M.A	250
Dawson, W. B., M.A., Ma.E.	50
Gibb, C., B.A.	100
Hutchison, M., B.C.L.	400
Hall, Rev. Wm., M.A.	100
Hall, J. S., jr., B.A., B.C.L.	100
Harrington, B. J., B.A., Ph.D.	50
Kirby, J., LL.D., D.C.L.	50
Lighthall, W. D., B.A., B.C.L.	100
Lyman, H. H., M.A	100
Lyman, A. C., M.A., B.C.L.	50
Leet, S. P., B.C.L.	100
McCormick, D., B.A.L.	100
McLennan, J. S., B.A.	100
McGibbon, R. D., B.A, B.C.L.	100
McGoun, A., jr., B.A., B.C.L.	50
Ramsay, R. A., B.A., B.C.L.	50
Stewart, J., M.D	60
Stewart, D. A., B. A. Sc.	20
Stephens, C. H., B.C.L.	100
Spencer, J. W., B.A.Sc., Ph.D.	50
Tait, M. M., B.C.L.	100
Taylor, A. D., B.A., B.C.L.	100
Trenholme, N. W., M.A., B.C.L.	400
Total to date	$3,010

ACADEMICAL YEAR 1886-87.

SEPTEMBER, 1886.

1 Wednesday	Normal School opens. Meeting of Normal School Committee.
2 Thursday	
3 Friday	
4 Saturday	
5 SUNDAY	
6 Monday	
7 Tuesday	
8 Wednesday	
9 Thursday	
10 Friday	
11 Saturday	
12 SUNDAY	
13 Monday	
14 Tuesday	
15 Wednesday	
16 Thursday	Mat. and Sup. Exn's in Classics Exhib. and Scholarship Exam.
17 Friday	Mat. and Sup. Ex'ns in Math's.
18 Saturday	Exhib. & Scholarship Exam's.
19 SUNDAY	
20 Monday	Mat. & Sup. Ex'ns in English, Logic, Men. and Mor. Phil. Exhib. and Sch. Exam'ns.
21 Tuesday	Mat. & Sup. Ex'ns in Modern Lang's and Nat. Sc.; Exhib. and Sch. Exam'ns.
22 Wednesday	Lect's in Arts and App. Science begin. Faculties meet.
23 Thursday	Matric. Exams. in Med.
24 Friday	Meeting of Faculty of Arts.
25 Saturday	Meeting of Governors, Register Med. Fac. opens.
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	Summer Essays in Applied Sc. given in.
30 Thursday	

OCTOBER, 1886.

1 Friday	Session of Medical and Law Faculties begins.
2 Saturday	
3 SUNDAY	
4 Monday	
5 Tuesday	Meeting of Fac. of App. Sc.
6 Wednesday	Founder's Birthday.
7 Thursday	Meeting of Nor. Sch. Committee. The William Molson Hall opened 1862.
8 Friday	Meeting Faculty of Arts.
9 Saturday	
10 SUNDAY	
11 Monday	
12 Tuesday	
13 Wednesday	
14 Thursday	
15 Friday	
16 Saturday	Univ. Athletic Sports.
17 SUNDAY	
18 Monday	
19 Tuesday	
20 Wednesday	
21 Thursday	
22 Friday	Meeting of Faculty of Arts.
23 Saturday	Meeting of Governors.
24 SUNDAY	
25 Monday	Meeting of Museum Com.
26 Tuesday	Meeting of Library Com.
27 Wednesday	Regular Meeting of Corporat'n
28 Thursday	School Examiners appointed.
29 Friday	Reps. on Schol'ship & Exh.
30 Saturday	Accounts audited.
31 SUNDAY	

NOVEMBER, 1886.

1 Monday	
2 Tuesday	Meeting of Fac. App. Science.
3 Wednesday	Meeting Normal School Com.
4 Thursday	
5 Friday	Meeting of Faculty of Arts.
6 Saturday	
7 SUNDAY	
8 Monday	
9 Tuesday	
10 Wednesday	
11 Thursday	
12 Friday	
13 Saturday	
14 SUNDAY	
15 Monday	
16 Tuesday	
17 Wednesday	
18 Thursday	
19 Friday	Meeting of Faculty of Arts.
20 Saturday	
21 SUNDAY	
22 Monday	
23 Tuesday	
24 Wednesday	
25 Thursday	
26 Friday	
27 Saturday	Meeting of Governors.
28 SUNDAY	
29 Monday	
30 Tuesday	

DECEMBER, 1886.

1 Wednesday	Meeting of Nor. Sch. Comm.
2 Thursday	
3 Friday	Meeting of Faculty of Arts.
4 Saturday	
5 SUNDAY	
6 Monday	
7 Tuesday	Meeting of Faculty of App. Sc.
8 Wednesday	
9 Thursday	
10 Friday	Lect's in Arts and Ap. Sc. end.
11 Saturday	Exam. Bot. Med. Studs.
12 SUNDAY	
13 Monday	Christmas Examinations begin.
14 Tuesday	
15 Wednesday	Exams. in Med. Lects. in Med. close. Exam's in Law begin.
16 Thursday	Meeting of Faculty of Arts.
17 Friday	Examinations in Law.
18 Saturday	Meeting of Governors.
19 SUNDAY	
20 Monday	Examinations in Law.
21 Tuesday	Christmas Vacation begins.
22 Wednesday	Examinations in Law.
23 Thursday	
24 Friday	
25 Saturday	Christmas-Day.
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	
30 Thursday	
31 Friday	

JANUARY, 1887.

1 Saturday	
2 SUNDAY	
3 Monday	
4 Tuesday	Christmas Vacation ends.
5 Wednesday	Lectures in Arts, Law, Med. & Applied Science recommence. Meeting of Fac. of App. Sce. Meeting of Nor. Sc. Comm.
6 Thursday	
7 Friday	Meeting of Fac. Arts.
8 Saturday	
9 SUNDAY	
10 Monday	
11 Tuesday	
12 Wednesday	
13 Thursday	
14 Friday	
15 Saturday	
16 SUNDAY	
17 Monday	
18 Tuesday	
19 Wednesday	
20 Thursday	
21 Friday	Meeting of Faculty of Arts.
22 Saturday	Meeting of Governors.
23 SUNDAY	
24 Monday	Meeting of Museum Com.
25 Tuesday	Meeting of Library Com.
26 Wednesday	Regular Meet'g of Corporation. Examiners appointed. Annual Report to Visitor.
27 Thursday	
28 Friday	
29 Saturday	Theses for M.A. & LL.D. to be sent in to the Vice-Dean of Faculty of Arts.
30 SUNDAY	
31 Monday	

FEBRUARY, 1887.

1 Tuesday	Theses for Deg of B.C.L. to be sent in to Dean of Fac. of Law
2 Wednesday	Meeting of Nor. Sch. Comm.
3 Thursday	Meeting of Examiners.
4 Friday	Meeting of Faculty of Arts.
5 Saturday	
6 SUNDAY	
7 Monday	
8 Tuesday	Meeting of Fac. App. Science.
9 Wednesday	
10 Thursday	
11 Friday	
12 Saturday	
13 SUNDAY	
14 Monday	
15 Tuesday	
16 Wednesday	
17 Thursday	
18 Friday	Meeting of Faculty of Arts. Supplemental Exam's in Arts and Applied Science.
19 Saturday	
20 SUNDAY	
21 Monday	
22 Tuesday	
23 Wednesday	No Lectures.
24 Thursday	
25 Friday	
26 Saturday	Meeting of Governors.
27 SUNDAY	
28 Monday	

MARCH, 1887.

1 Tuesday	Theses for Degree of B.C.L. to be sent in to Dean of Faculty.
2 Wednesday	Meeting of Nor. Sc. Com.
3 Thursday	
4 Friday	Meeting of Faculty of Arts.
5 Saturday	
6 SUNDAY	
7 Monday	
8 Tuesday	Meeting of Fac. of Ap. Science.
9 Wednesday	
10 Thursday	Lectures in Medicine end.
11 Friday	Exam. in Botany, Med. Fac.
12 Saturday	
13 SUNDAY	
14 Monday	Primary Exam's in Med. begin.
15 Tuesday	
16 Wednesday	
17 Thursday	
18 Friday	Meeting of Fac. of Arts. Examinations in Law.
19 Saturday	Examinations in Law.
20 SUNDAY	
21 Monday	Final Exam's in Med.
22 Tuesday	
23 Wednesday	
24 Thursday	
25 Friday	Meeting of Fac. of Arts. Reports of Attendance on Lects. Examinations in Law.
26 Saturday	Meeting of Governors.
27 SUNDAY	
28 Monday	Examinations in Law.
29 Tuesday	Convocation for Degrees in Med.
30 Wednesday	Examinations in Law.
31 Thursday	Lects. in Arts and Ap. Sc. end.

APRIL, 1887.

1 Friday	
2 Saturday	
3 SUNDAY	
4 Monday	B.A. Hon. Exam's begin.
5 Tuesday	Meeting of Fac. of Ap. Science
6 Wednesday	Meeting of Nor. Sc. Committee
7 Thursday	
8 Friday	Good Friday, Easter Vacations begins.
9 Saturday	Convocation for Deg's in Law
10 SUNDAY	Easter Sunday.
11 Monday	Sumr. Session Med. Fac. begins
12 Tuesday	Easter vacation ends.
13 Wednesday	Meeting of Examiners.
14 Thursday	
15 Friday	Meeting of Fac. of Arts.
16 Saturday	
17 SUNDAY	
18 Monday	
19 Tuesday	
20 Wednesday	Meeting of Examiners.
21 Thursday	
22 Friday	
23 Saturday	Meeting of Governors
24 SUNDAY	
25 Monday	Meeting of Museum Committee
26 Tuesday	Meeting of Library Committee
27 Wednesday	Regular meeting of Corporation
28 Thursday	Meeting of Examiners. Declaration of result of Exam's.
29 Friday	
30 Saturday	Meeting of Convocation.

MAY, 1887.

1 SUNDAY	
2 Monday	Exams. in Nor. School begin.
3 Tuesday	
4 Wednesdoy	Normal School Committee.
5 Thursday	
6 Friday	
7 Saturday	
8 SUNDAY	
9 Monday	
10 Tuesday	
11 Wednesday	Meeting of Examiners for Sch. Examinations.
12 Thursday	
13 Friday	
14 Saturday	
15 SUNDAY	
16 Monday	
17 Tuesday	
18 Wednesday	
19 Thursday	
20 Friday	
21 Saturday	
22 SUNDAY	
23 Monday	
24 Tuesday	Queen's Birthday.
25 Wednesday	
26 Thursday	
27 Friday	
58 Saturday	Meeting of Governors.
29 SUNDAY	
30 Monday	
31 Tuesday	Normal Sch. closes for Summer Vacation.

JUNE, 1887.

1 Wednesday	Examinations for Certificate of Associate in Arts begin.
2 Thursday	Normal School Committee.
3 Friday	
4 Saturday	
5 SUNDAY	
6 Monday	
7 Tuesday	
8 Wednesday	
9 Thursday	
10 Friday	
11 Saturday	
12 SUNDAY	Whit-Sunday.
13 Monday	
14 Tuesday	
15 Wednesday	
16 Thursday	
17 Friday	
18 Saturday	Declaration of results of School Examinations.
19 SUNDAY	
20 Monday	Meeting Museum Committee.
21 Tuesday	Meeting of Library Committee.
22 Wednesday	Regular Meeting of Corporat'n.
23 Thursday	Report of Normal School.
24 Friday	
25 Saturday	Meeting of Governors.
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	
30 Thursday	

JULY, 1887.

1 Friday	Summr. Sessn. Med. Fac. ends.
2 Saturday	
3 SUNDAY	
4 Monday	
5 Tuesday	
6 Wednesday	
7 Thursday	
8 Friday	
9 Saturday	
10 SUNDAY	
11 Monday	
12 Tuesday	
13 Wednesday	
14 Thursday	
15 Friday	
16 Saturday	
17 SUNDAY	
18 Monday	
19 Tuesday	
20 Wednesday	
21 Thursday	
22 Friday	
23 Saturday	
24 SUNDAY	
25 Monday	
26 Tuesday	
27 Wednesday	
28 Thursday	
29 Friday	
30 Saturday	
31 SUNDAY	

AUGUST, 1887.

1 Monday	
2 Tuesday	
3 Wednesday	
4 Thursday	
5 Friday	
6 Saturday	
7 SUNDAY	
8 Monday	
9 Tuesday	
10 Wednesday	
11 Thursday	
12 Friday	
13 Saturday	
14 SUNDAY	
15 Monday	
16 Tuesday	Peter Redpath Museum opened, 1882.
17 Wednesday	
18 Thursday	
19 Friday	
20 Saturday	
21 SUNDAY	
22 Monday	
23 Tuesday	
24 Wednesday	
25 Thursday	
26 Friday	
27 Saturday	
28 SUNDAY	
29 Monday	
30 Tuesday	
31 Wednesday	

FACULTY OF ARTS.

EXHIBITION, SCHOLARSHIP, &c., EXAMINATIONS, SEPTEMBER, 1886.

Day.	Date	First Year.	Second Year.	Third Year.	Hours.
Thursday.	16	Greek.	Greek.	Greek.	9 to 12
"	16	Latin.	Latin.	Latin Prose Comp.	2 to 5
"	16			Mathematics.	9 to 12
Friday.	17	Mathematics.	Mathematics.	Latin.	9 to 12
"	17			Mathematics.	9 to 12
"	17			Botany.	9 to 12
"	17			Ancient History.	2 to 5
"	17			Botany.	2 to 5
Saturday.	18		Mathematics.	Mathematics.	9 to 12
			English.		2 to 5
Monday.	20	English.	English.	English.	9 to 12
"	20			Logic.	9 to 12
"	20	English.		English.	2 to 5
"	20		Chemistry.	Chemistry.	2 to 5
Tuesday.	21			Mathematics.	9 to 12
"	21			Botany.	9 to 12
"	21		French.	French.	9 to 12
"	21	Grammar and Comp. (Classics).	General Paper. (Classics).	English Composition	2 to 5

CHRISTMAS EXAMINATIONS, DECEMBER, 1886.

Day.	Date	First Year.	Second Year.	Third Year.	Fourth Year.
Monday	13	Latin.	Latin.	Mechanics.	Astronomy.
Tuesday	14	Greek.	Botany.	Greek. Botany A.M. & P.M	
Wed.	15	Mathematics.	Psychology.	Latin.	Moral Philosophy.
Thurs.	16	Chemistry.		Zoology.	Geology.
Friday.	17	French, A.M.	French, A.M.		
"	17	German, P.M.	German, P.M.		
"	17	Hebrew, P.M.			
Sat.	18	English.			

FACULTY OF ARTS.

SESSIONAL AND HONOUR EXAMINATIONS, 1887.

Date.	Day.	First Year.		Second Year.		Third Year.		Fourth Year.	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
March 31	Thurs.		Hebrew.		Hebrew.		Hebrew.		Hebrew.
April 4	Mon.			Greek.		Math. Phys.		B.A. Honours.	
" 5	Tues.	Greek.		Latin.	Composition.	Latin.		Ethics.	Ethics.
" 6	Wed.	Latin.	Ancient History.	English.	English.	Ex. Physics.	English.	Latin.	Latin.
" 7	Thurs.	English.			Easter Vacation	begins.		Ex. Physics.	History.
" 8	Friday.	Good Friday.							
" 9	Sat.								
" 10	Sun.	Easter day.							
" 11	Mon.			Mathematics.		Greek.		Math. Physics and B.A. Honours.	
" 12	Tues.	Mathematics.		Mathematics.		Math. Phys.		Math. Physics and B.A. Honours.	
" 13	Wed.	Mathematics.							
" 14	Thurs.			French.		Metaphysics.		Geology, A.M. & P.M.	
" 15	Fri.	French.							
" 16	Sat.					Zoology.		Greek, A.M.	History, P.M.
" 17	Sun.								
" 18	Mon.	Chemistry.		Logic.		French.		French, B.A. Honours.	
" 19	Tues.	Meeting of Examiners.		Botany.		German.		German.	
" 20	Wed.			German.					
" 21	Thurs.	German.							
" 22	Fri.								
" 23	Sat.	Meeting of Examiners.							
" 24	Sun.								
" 25	Mon.	Honour Examinations.		Honour Examinations.		Honour Examinations.		B.A. Honours.	
" 26	Tues.	Honour Examinations.		Honour Examinations.		Honour Examinations.		B.A. Honours.	
" 27	Wed.	Meeting of Examiners.		Meeting of Corporation.					
" 28	Thurs.	Meeting of Examiners.		Declaration of results.					
" 29	Fri.								
" 30	Sat.	Meeting of Convocation.							

FACULTY OF APPLIED SCIENCE.

EXAMINATIONS.—1886-87.

CHRISTMAS, 1886.

The days of the several Examinations will be announced by the Faculty during the Session.

SESSIONAL, 1887.

Days.	First Year.	Second Year.	Third Year.	Fourth Year.
1 Frid.		Mechanism.	Theory of Struct.	Theory of Structures.
2 Sat.	Freehand Drawing.	Descrpt've Geomet'y	Descrp've Geometry	
3 Sun.	*	*	*	*
4 Mon.	Practical Chemistry.		Theory of Structures	Theory of Structures.
5 Tues.	Essay.	Essay.	Essay.	Essay.
6 Wedn.		Steam-Engine and Workshop Practice.	Steam-Engine and Workshop Practice.	Theory of Structures.
7 Thurs.		English (p.m.)	English (p.m.)	
8 Frid.		Exp. Physics (a.m.)	Exp. Physics (a.m.)	Theory of Structures.
9 Sat.		Surveying.	Mach'y & Millwork. Surveying.	
10 Sun.	*	*	*	*
11 Mond.		Materials.	Materials.	Materials.
12 Tues.	Mathematics.	Mathematics.	Mathematics.	Mineralogy (adv).
13 Wedn.	Mathematics.	Mathematics.	Theoretical Chem'y. Mathematics.	Geology (adv.)
14 Thurs.	Mathematics.	Mathematics.	Mathematics.	Hydraulics.
15 Frid.	French.	French.	Geology.	Geology.
16 Sat.			Mining.	Metallurgy.
17 Sun.	*	*	*	*
18 Mon.	Chemistry.	Mechanical Work. Chemistry.	Mechanical Work. Chemistry.	Steam.
19 Tues.	Mathematics.	Zoology (p.m.) Mathematics.	Mathematics.	
20 Wedn.		Botany.	French.	
21 Thurs.	German.	German	German.	Hydraulics (adv.)
22 Frid.		Pract. Chemistry.	Pract. Chemistry.	Assaying. Steam (adv.)
23 Sat.	Easter Vacation.			
24 Sun.	*	*	*	*
25 Mon.			Mineralogy.	Lithology.
26 Tues.			Mineralogy.	Geology (adv.)
27 Wedn.				
28 Thurs.				
29 Friday.				
30 Sat.		Convocation.		

Faculty of Arts.

THE PRINCIPAL (Ex-officio.)

Professors :—LEACH (*Emeritus*).
MARKGRAF.
DAWSON.
JOHNSON.
CORNISH.
DAREY.
MURRAY.

Professors :—MOYSE.
HARRINGTON.
PENHALLOW.

Lecturers :—COUSSIRAT.
CHANDLER.
MULGAN.
LAFLEUR.

Dean of the Faculty :—VEN. ARCHDEACON LEACH D.C.L., LL.D.
Vice-Dean :—ALEXANDER JOHNSON, LL.D.
Honorary Librarian :—REV. GEORGE CORNISH, LL.D.

[CONTENTS.—*Matriculation*, &c., § I.; *Exhibitions*, &c., § II.; *Course of Study*, § III.; *Examinations, Degrees*, &c., § IV.; *Exemptions*, &c., § V.; *Medals*, &c.; § VI., *Licensed Boarding Houses*, § VII.; *Attendance and Conduct* § VIII; *Library*, § IX.; *Peter Redpath Museum*, § X.; *Fees*, &c., § XI; *Courses of Lectures*, § XII.]

The next Session of this Faculty will begin on September 16th, 1886, and will extend to April 30th, 1887.

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§ I. MATRICULATION AND ADMISSION.

1. UNDERGRADUATES.—Candidates for Matriculation as Undergraduates are required to present themselves to the Vice-Dean of the Faculty on the 16th of September, for examination; they may, however, enter after the beginning of the Session, if, on examination, found qualified to join the classes.

(*a*) The subjects of examination for entrance into the First Year are Classics, Mathematics and English.

Examination for Entrance into the First Year.

In Classics — Greek.—Xenophon, Anabasis, Book I.; or, Homer, Iliad, Book I.; Greek Grammar.

Latin.—Cicero, Orations I. and II., against Catiline; or, Virgil, Æneid, Book I.; Latin Grammar.

In Mathematics.—Arithmetic; Algebra, to Simple Equations (inclusive); Euclid's Elements, Books, I., II., III.

In English.—Writing from Dictation. A paper on English Grammar *including Analysis.* A paper on the leading events of English History.

An equivalent amount of other books or other authors in Latin and Greek than those named may be accepted by the Examiners on application made through the Professor of Classics.

[Associates in Arts who, at their special Examination have passed in Latin, Greek, Algebra and Geometry, are not required to present themselves for the Matriculation Examination.]

An *Advanced Examination* in any one or more of the subjects of the First Year will be held for such of the candidates as desire it. Candidates who pass creditably in this will be entitled to such exemption from the Lectures and from the Christmas Examinations of the First Year as the Faculty may determine. For the Advanced Examination in Classics two authors in Latin and two in Greek will be required, and the books fixed (see below) must be taken.

Candidates for the Advanced Examination must send notice to the Vice-Dean of their intention before the day of Examination, stating the subjects of the First Year and the extent of reading in each they purpose to submit.

Partial or Occasional Students (see below) in the First Year, who pass the April Sessional Examinations in one or more subjects, will, if Candidates for Undergraduate standing in the First Year in the following September, be allowed to count these as Advanced Examinations under the above rule.

The *Courses in some of the subjects for Advanced Matriculation* are as follows:—

Classics.

Greek.—Xenophon, Anabasis, Book I.; Homer, Iliad, Book VI.

Latin.—Cicero, Orations I and II against Catiline; Virgil, Æneid, Book II.

A paper on Greek and Latin Grammar, and Latin Prose Composition (Text-book, Smith's Principia Latina, Part IV.)

Mathematics.

Candidates who pass a satisfactory Examination in the Arithmetic and Euclid

of the First Year (see course for entrance into Second Year) will be exempt from lectures up to Christmas and from the Christmas Examination.

Candidates who, in addition to the above, pass a satisfactory Examination in Algebra and Trigonometry, will be exempt from lectures altogether in these subjects in the First Year.

Candidates who pass a satisfactory Examination on Morley's First Sketch of English Literature, Celtic period to Elizabethan period (inclusive), will be exempt from the lectures on Literature during the First Year.

(*b*) Candidates not matriculated in the University, or Partial Students of the First Year, may be admitted to the standing of students of the Second Year, provided that they pass the Sessional Examinations of the First Year, or an Examination in the following subjects at the beginning of the Second Year:—

Examinations for Entrance into the Second Year.

In Classics.—*Greek.*—Homer, Iliad, Book VI.; Xenophon, Anabasis, Book I.; Grammar and Prose Composition.

Latin.—Virgil, Æneid, Book VI.; Cicero, Orations IV. against Catiline; Grammar and Prose Composition.

[An equivalent amount of other books or other authors in Latin and Greek than those named above may be accepted by the Examiners for entrance into the Second Year on application made through the Professor of Classics.]

In Mathematics.—

Euclid.—Books I., II., III., IV., VI., with defs. of Book V. (omitting Propositions 27, 28, 29, of Book VI.)

Algebra.—To end of Quadratic Equations. (Colenso's Alg.)

Trigonometry.—Galbraith and Haughton's Trigonometry, Chaps. 1, 2, 3, 4, 6, to beginning of numerical solution of plane triangles.

Arithmetic.—Elementary rules, Proportion, Interest, Discount, &c., Vulgar and Decimal Fractions, Square Root.

In English Literature.—Writing from Dictation, English Grammar, including Analysis, English Composition, British History (Collier).

In French.—French Grammar; or (instead of French) *German*—in which knowledge sufficient to enable the Candidate to join the regular class will be required.

Chemistry.—The Chemistry of the non-metallic Elements, or of the more common metals.

—Candidates unable to pass in French or German are not excluded; but required to begin German, and to continue the study of it for two years.

Candidates unable to pass in Chemistry are required to attend such of the lectures in the subject as are open to them, and to pass an examination at the end of the Second Year.]

(*c*) *Students of other Universities* may be admitted, on the production of Certificates, to a like standing in this University, after examination by the Faculty.

2. PARTIAL STUDENTS.—Candidates for Matriculation as Partial Students, taking three or more Courses of Lectures, will be examined in the subjects necessary thereto, as may from time to time be determined by the Faculty.

3. OCCASIONAL STUDENTS.—Persons desirous of taking one or two Courses of Lectures, as Occasional Students, may apply to the Vice-Dean for entry in his Register, and may procure from the Secretary tickets for the Lectures they desire to attend.

Note.—Every Student is expected to present, on his entrance, a written intimation from his parent or guardian of the name of the minister of religion under whose care and instruction it is desired that the Student shall be placed, who will thereupon be invited to put himself in communication with the Faculty on the subject. Failing such intimation from his parent or guardian, the Faculty will endeavor to establish befitting relations.

4. Every matriculated student is required to sign in the Matriculation register the following:—

DECLARATION.

"I hereby declare that I will observe the statutes, rules and ordinances of this "University of McGill College to the best of my ability."

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§ II. SCHOLARSHIPS AND EXHIBITIONS.

GENERAL REGULATIONS.

1. A Scholarship is tenable for *two* years. An Exhibition for *one* year.

2. Scholarships are open for competition to Students who have passed the University Intermediate Examination, provided that not more than three Sessions have elapsed since their Matriculation; and also to candidates who have obtained what the Faculty may deem equivalent standing in some other University, provided that application be made before the end of the Session preceding the Examination.

3. Scholarships are divided into two classes :—[1] *Science* Scholarships; [2] *Classical and Modern Language* Scholarships. The subjects of Examination for each are as follows :—

Science Scholarships.—Differential and Integral Calculus ; Analytic Geometry ; Plane and Spherical Trigonometry ; Higher Algebra and Theory of Equations ; Botany ; Chemistry ; Logic. (For subdivision see below.)

Classical and Modern Language Scholarships.—Greek ; Latin ; English Composition ; English Language, Literature, and History ; French.

4. Exhibitions are assigned to the First and Second Years.

First Year Exhibitions are open for competition to candidates for entrance into the First Year.

Second Year Exhibitions are open for competition to Students who have passed the First Year Sessional Examinations, provided that not more than two Sessions have elapsed since their Matriculation ; and also to candidates for entrance into the Second Year.

The subjects of Examination are as follows :—

First Year Exhibitions.—Classics, Mathematics, English.

Second Year Exhibitions.—Classics, Mathematics, English Language and Literature, Chemistry, French.

5. The first and Second Year Exhibition Examinations will, for Candidates who have not previously entered the University, be regarded as Matriculation Examinations.

6. No student can hold more than one Exhibition or Scholarship at the same time ; but four of the first Year Exhibitioners will be granted exemption from the Sessional fees throughout their College Course, under Presentation Scholarships from the Governor General. (See below.)

7. Exhibitions and Scholarships will not necessarily be awarded to the best answerers at the Examinations. Absolute merit will be required.

8. If in any one College Year there be not a sufficient number of Candidates showing absolute merit, any one or more of the Exhibitions or Scholarships offered for competition may be transferred to more deserving Candidates in another year.

9. A successful Candidate must, in order to retain his Scholarship or Exhibition, proceed regularly with his College Course to the satisfaction of the Faculty.

10. The annual income of the Scholarships or Exhibitions will be paid in four instalments, viz. :—In October, December, February and April, about the 20th day of each month.

11. The Examinations will be held at the beginning of every Session.

There are at present sixteen Scholarships and Exhibitions :—

THE JANE REDPATH EXHIBITION, founded by Mrs. Redpath, of Terrace Bank Montreal :—value $100 yearly, open to both men and women.

TEN MCDONALD SCHOLARSHIPS AND EXHIBITIONS, founded by W. C. McDonald, Esq., Montreal :—value, $125 each, yearly.

THE CHARLES ALEXANDER SCHOLARSHIP, founded by Charles Alexander, Esq., Montreal, for the encouragement of the study of Classics and other subjects :—value, $120 yearly.

THE GEORGE HAGUE EXHIBITION, given by George Hague, Esq., Montreal, for the encouragement of the study of Classics :—value, $125 yearly.

THE MAJOR H. MILLS SCHOLARSHIP, founded by bequest of the late Major Hiram Mills :—value, $100 yearly.

A SCHOLARSHIP, given by Dr. Johnson for 1885-6 and 1886-7 :—value $125 yearly.

THE BARBARA SCOTT SCHOLARSHIP, founded by the late Miss Barbara Scott for the encouragement of the study of the Classical languages and literature :—value, $100 to $120 yearly.

EXHIBITIONS AND SCHOLARSHIPS OFFERED FOR COMPETITION AT THE OPENING OF THE SESSION, SEPT., 1886.

To Students entering the First Year, Three Exhibitions of $125, *and one of* $100.

Subjects of Examination :—

GREEK.—Homer, Iliad, bk. VI. ; Xenophon, Anabasis, bk. V. ; Demosthenes, Aphobus I. and II.

LATIN.—Cicero, in Catilinam, Oratt. I. and II. ; Virgil, Æneid, Bk. I., vss. 1-304 ; Cæsar, Bellum Britannicum (Bk IV., 20 to V. 23, Bell. Gall.).

A paper on Greek and Latin Grammar.

Text-books.—Hadley's Elements of Greek Grammar. Arnold's Greek Prose Composition, Exercises 1 to 25. Dr. Wm. Smith's Smaller Latin Grammar, and Principia Latina, Part IV.

Mathematics.—Euclid, bks. I., II., III., IV. ; Algebra to end of Harmonical Progression (Colenso) ; Arithmetic.

English.—English Grammar and Composition.—(Mason's Grammar, omit Derivation and Appendix.)

The First Year Exhibitions will be awarded to the best answerers in the above course, provided there be absolute merit.

But in subsequently distributing the Exhibitions of higher value among the successful candidates, answering in the following subjects will be taken into account also :—

1. A re-translation into Latin of an English version of some passage from one of the easier Latin Prose writers (for specimens see Smith's Principia Latina, Part V.)

2. Euclid, Book VI. (omitting Props. 27, 28, 29,) with Defs. of Book V.

3. English :—An Examination upon one of Shakespeare's plays. For 1886.—Coriolanus.

To Students entering the Second Year, Two Exhibitions of $125, *and one of* $100.

Subjects of Examination :—

Greek.—Homer, Odyssey, bk. XXI. ; Herodotus, bk. III., Chaps. 1 to 67 ; Demosthenes, Olynthiacs I. and II.

Latin.—Virgil, Æneid, bk. VI. ; Horace, Odes, bk. I. ; Livy, bk. XXII., Chaps. 1-23 ; Cicero, In Cæcilium.

Greek and Latin Prose Composition.

A paper on Grammar and History.

Text-books.—Dr. William Smith's History of Greece. Liddell's History of Rome. Hadley's Greek Grammar. Smith's Student's Latin Grammar. Arnold's Greek Prose Composition. Smith's Principia Latina, Parts IV. and V.

Mathematics.—The Mathematics (Ordinary and Honour) of First Year.

English Literature.—Mason's Grammar. Shakespeare, As you Like it. Trench, Study of Words.

Chemistry.—Nichol's Abridgment of Elliot and Storer's Manual as far as p. 108.

French.—Darey, Principes de Grammaire francaise; Lafontaine, les Fables, livres I. and II. ; Molière, les Fourberies de Scapin.

To Students entering the Third Year, Four Scholarships of $125, *tenable for two Years.*

One of these is offered in Mathematics and Logic, and one in Natural Science and Logic, as follows :—

1. *Mathematics.*—Differential Calculus (Williamson, Chaps. 1, 2, 3, 4, 7, 9 ; Chap. 12, Arts. 168-183 inclusive ; Chap. 17, Arts. 225-242 inclusive). Integral Calculus (Williamson, Chaps. 1, 2, 3, 4, 5 ; Chap. 7, Arts. 126-140 inclusive ; Chap. 8, Arts. 150-156 inclusive ; Chap. 9, Arts. 168-176 inclusive). Analytic Geometry (Salmon's Conic Sections, subjects of Chaps. 1-13 (omitting Chap. 8), with part of Chap. 14. Hind's Plane and Spherical Trigonometry. Salmon's Modern Higher Algebra (first four chapters). Todhunter's Theory of Equations (selected course).

Logic, as in Jevon's Elementary Lessons on Logic.

2. *Natural Science.—Botany*, as in Gray's Structural and Systematic Botany. *Canadian Botany*, including a practical acquaintance with all the orders of Phænogams and Acrogens. *Chemistry*, Nichol's abridgment of Eliot and Storer's Manual of Chemistry.

Logic, as in Jevon's Elementary Lessons on Logic.

Two will be given on an Examination in Classics and Modern Languages, as follows :—

Classics.—Greek.—Euripides, Medea ; Demosthenes, the Olynthiacs ; Xenophon, Hellenics, Book I. ; Herodotus, Book VIII. ; Thucydides, Book VI. *Latin.*—Horace, Satires, Book I., and Epistles, Book I. ; Virgil, Georgics, Book I. ; Terence, Adelphi ; Tacitus, Annals, Book I. ; Pliny, Select Letters (Pritchard and Bernard ; Clarendon Press Series). Greek and Latin Prose Composition.

History —Text-books.—Rawlinson's Manual of Ancient History ; Smith's Student's Greece ; Liddell's Rome.

English Language and Literature.—Spalding's English Literature (Chap. VI., Part III., to end of book) ; Shakespeare, Tempest ; Milton, Paradise Lost, books I. and II. ; Trench, Study of Words.

English Composition.—(High marks will be given for this subject.)

French.—Racine, Britannicus ; Molière, les Femmes savantes. French Grammar. Les Ecrivains célèbres de la France :—Bonnefon. Translation from English into French.

Classical Subjects for Exhibitions, September, 1887.

GREEK.—*First Year.*

Homer, Iliad, bk. XXII. ; Xenophon, Anabasis, bk. I. ; Demosthenes, Aphobus, I. and II.

LATIN.—*First Year.*

Cicero, In Catilinam, Orat. I. ; Virgil, Æneid, bk. I ; Cæsar, Bellum Britannicum (IV., 20 to V.—23, Bell. Gall.).

GREEK.—*Second Year.*

Homer, Odyssey, bk. VI. ; Herodotus, bk. III. ; Chaps. 1 to 67 ; Demosthenes, Olynthiacs I. and II.

LATIN.—*Second Year.*

Virgil, Georgics, II. ; Horace, Odes, bk. III. ; Livy, bk. XXII. Chaps. 1-23 ; Cicero, In Cæcilium.

The other subjects are the same as for 1886.

EXEMPTIONS FROM FEES UNDER PRESENTATION SCHOLARSHIPS, &c.

A number of these are in the gift of Benefactors, and entitle the Students holding them to exemption from the Sessional Fees in the Faculty of Arts. Sixteen have been placed by the Governors at the disposal of His Excellency the Governor General. Candidates must pass the usual Matriculation Examination.

[By command of His Excellency, four of these Exemptions will be offered for competition in the First Year Exhibition Examinations of the ensuing session.]

Eight exemptions from fees may be granted by the Board of Governors, from time to time to the most successful students who may present themselves as candidates. By order of the Board one of these is given annually to the *Dux* of the High School of Montreal, and one to the Dux of any other Academy or High School sending up, in one year, three or more candidates competent to pass creditably the Matriculation Examination.

In the event of any Academy or High School in the Province of Quebec offering for competition among pupils an Annual Bursary in the Faculty of Arts, of not less than $80, the Governors will add the amount of the fees of tuition thereto.

An exemption from fees may be given annually to any teacher holding the Model School or Academy Diploma of the McGill Normal School, recommended by the Principal and Professors of the School, and passing creditably the Matriculation Examination in Arts.

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§ III. COURSE OF STUDY.

1. Undergraduates are arranged according to their standing, as Students of the First, Second, Third or Fourth Year. They are required to attend all the courses of Lectures and pass the examinations appointed for their several years, under the Regulations of the Faculty as to attendance and conduct; the only exceptions are those in favour of Honour and Professional Students, stated in § V.

ORDINARY COURSE FOR THE DEGREE OF B.A.

First Year.—Classics; French or German; English Grammar and Literature; Pure Mathematics; Elementary Chemistry.

Second Year.—Classics; French or German; English Literature; Elementary Psychology and Logic; Pure Mathematics; Botany.

Third Year.—Latin or Greek; Mathematical Physics (Mechanics and Hydrostatics); with any two of the following departments—French or German (whichever the Student has taken in the first two years); Experimental Physics *; Zoology; English and Rhetoric; together with the above, termed

the *Ordinary Departments*, must be taken one *Additional Department*, for which see below.

Fourth Year.—Latin or Greek (same language as in Third Year); Mathematical Physics (as in Third Year, or Astronomy and Optics); Mental and Moral Philosophy; with any two of the following departments—French or German (same language as in previous years); Experimental Physics*; Geology; History; together with the above, termed the *Ordinary Departments*, must be taken one *Additional Department* (the same as chosen in the Third Year), for which see below.

* Students claiming exemptions (see § V) cannot take Experimental Physic if they have not taken the Third Year Mathematical Physics.

(N.B. The *Additional Departments*, referred to above, of which one must be selected, the same department being taken both in the third and fourth years, are as follows, viz.:—(1) Classics, including Latin and Greek. (2) Mathematical Physics, including Optics with Astronomy. (3) Experimental Physics, when not taken as part of the ordinary course. (4) Natural Science, viz., any one of the three following subjects:—(*a*) Theoretical and Practical Chemistry. (*b*) Geology of Canada and Palæontology. (*c*) Advanced Botany. (5) Mental and Moral Philosophy. (6) English with History. (7) One Modern Language (or Heb.ew).

A Student cannot, in general, take the "Additional" Department in any subject unless he takes the "Ordinary" Department in the same subject; but in the Third Year, a Student taking English and Rhetoric may take either English or Mental and Moral Philosophy as his "Additional" Department.

Undergraduates are required to study either French or German for two years (viz., in the First and Second Years), taking the same language in each year. Any Student failing to pass the Examination at the end of the Second Year will be required to pass a Supplemental Examination, or to take an additional Session in the Language in which he has failed. In addition to the obligatory, there are other lectures, attendance on which is optional.

Students who intend to join any Theological School, on giving written notice to this effect at the beginning of the First Year, may take Hebrew instead of French or German.

Undergraduates who have been previously Partial or Occasional Students, and have in that capacity attended a particular Course or Courses of Lectures may, at the discretion of the Faculty, be exempted from further attendance on these Lectures, but no distinction shall in consequence be made between the Examinations of such Undergraduates and of those regularly attending Lectures.

2. At the Examination for the Degree of B.A., Honours are given in the following subjects, for which special Honour Courses are provided:—[For details see under § XII.]

1. *Classical Languages and Literature.*
2. *Mathematics and Physics.*
3. *Mental and Moral Philosophy.*
4. *English Languages, Literature and History.*
5. *Geology and other Natural Sciences.*
6. *Modern Languages with History (Lansdowne Medal Course).*

Honours are given in the above subjects in the Third Year also, and in Mathematics in the First and Second Years.

Candidates for Honours are allowed exemptions under conditions stated in IV.

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§ IV. EXAMINATIONS.

COLLEGE EXAMINATIONS

For Students of McGill College only.

1. There are two Examinations in each year: one at Christmas and the other at the end of the Session. In each of these the students who pass are arranged according to their answering as 1st Class, 2nd Class, and 3rd Class.

In the Fourth Year only, the University Examination for B. A. takes the place of the Sessional Examination.

2. Students who fail in any subject at the Christmas Examinations are required to pass a Supplemental Examination in that subject before admission to the Sessional Examinations.

3. Undergraduates who fail in one subject at the Sessional Examinations of the first two years are required to pass a Supplemental Examination in it. Should they fail in this, they will be required in the following Session to attend the Lectures and pass the Examination in the subject in which they have failed, in addition to those of the Ordinary Course, or to pass the Examination alone without attending lectures, at the discretion of the Faculty.

4. Failure in two or more subjects at the Sessional Examinations of the first two years, or in one subject at the Third Year Sessional examinations, involves the loss of the Session. The Faculty may permit the Student to recover his standing by passing a Supplemental Examination at the beginning of the ensuing Session. For

the purpose of this Regulation, Classics and Mathematics are each regarded as two subjects.

5. The time for the Supplemental Examination will be fixed by the Faculty ; the Examination will not be granted at any other time, except by special permission of the Faculty, and on payment of a fee of $5.

UNIVERSITY EXAMINATIONS.

For Students of McGill College and of Colleges affiliated in Arts.

1. FOR THE DEGREE OF B.A.

There are three University Examinations :—The *Matriculation* at entrance ; the *Intermediate*, at the end of the Second Year ; and the *Final*, at the end of the Fourth Year.

1. The subjects of the Matriculation Examination are stated in Section I.

2. In the Intermediate Examination the subjects are Classics and Pure Mathematics, Logic and the English Language, with one other Modern Language, or Botany. Theological Students are allowed to take Hebrew instead of a Modern Language. The subjects for the examination of 1887 are as follows :

Classics.—Greek.—Plato.—Apology and crito.
Latin.—Horace.—Epistles, Book I.
Latin Prose Composition.

Mathematics. Arithmetic.
Euclid, Books I., II., III., IV., and defs. of Book V.
Algebra, to Quadratic Equations, inclusive.
Trigonometry, including use of Logarithms.

Logic.—Jevons' Elementary Lessons in Logic.

English.—Spalding's History of English Literature or Lectures (see course).
A paper on the essentials of British History (Collier).
With one of the following :—

1. *Botany and Vegetable Physiology.*—Structural and Systematic Botany, as in Gray's Text-Book, omitting the Descriptions of the Orders.
2. *French.*—C. Delavigne :—Les Enfants d'Edouard. Racine : Phèdre. Ecrivains célèbres de la France :—XVI. and XVII. cent. Translation into French :—Rasselas.
Grammatical questions.

3. *German.*—Schmidt's German Guide ; Adler's Reader (selections from secs. 3 and 4) ; Translation into German.
4. *Hebrew.*—The Intermediate course (See § XII).

3. For the Final or B. A. Ordinary Examination the subjects are those appointed as obligatory in the Third and Fourth Years, viz., Latin or Greek ; Mathematical Physics (Mechanics and Hydrostatics) or Astronomy and Optics ; Mental and Moral Philosophy ; and those departments (two "Ordinary" and one "Additional" which the Candidate may have selected for himself in the Third and Fourth Years. See § III.

The subjects in detail for 1887 are as follows:—

Classics.

1 *Greek.*—Thucydides, Book VI. ; Æschylus, Prometheus Vinctus ; Greek History. (The Peloponnesian war). (Or Latin as follows) :—
2. *Latin.*—Tacitus, Annals, Book II. ; Plautus, Aulularia ; Roman History. (The twelve Caesars).

*In Classics Greek may be reckoned as the Additional Department by students taking Latin as their Ordinary subject, and, vice versa, Latin by students taking Greek.

Mathematical Physics.

1. Mechanics and Hydrostatics, as in Galbraith & Haughton's text-books.
2. Optics and Astronomy, " "

*Astronomy and Optics may be reckoned as the Additional Department by Students taking Mechanics and Hydrostatics as their ordinary subjects, and, vice versa, Mechanics and Hydrostatics by Students taking Astronomy and Optics. The Experimental Physics of the Session may be regarded as the "Additional" to either, if the Student prefer.

Mental and Moral Philosophy.

Calderwood's Handbook of Moral Philosophy (omitting the Historical Sketch, pp. 43-76), and Rogers' Manual of Political Economy.
* Lectures, with Schwegler's History of Philosophy, Chaps. 23-45 (inclusive), and Lorimer's Institutes of Law.

Natural Science.

Mineralogy and Geology, as in Dana's Manual and Dawson's Lecture Notes.
Geology of Canada and Palæontology, or Practical Chemistry, as in § XII.

Experimental Physics.

Electricity, Magnetism and Sound.
* *Heat and Light* (see Courses of Lectures § XII).

History.

Freeman :—General sketch of European History ; Bryce's Holy Roman Empire (omit Chaps. VI., VIII., IX., XIII., and Supplementary Chapter)
* As in § XII.

French.

The Course of French for the Fourth Year.
* The subject of the Additional Department as in § IX.

German.

The Course of German for the Fourth Year.
* Additional Department as in § XII.

Hebrew. (Theological Students only).

The advanced Course see § XII.

* Additional Departments, one of which is to be selected by each candidate.

For details of each subject, see Courses of Lectures, § XII.

At the B.A. Ordinary Examination, of those Candidates who obtain the required aggregate of marks, only those who pass in the First Class in three of the Departments and not less than Second Class in the remainder, shall be entitled to be placed in the First Class for the Ordinary Degree.

4. Every Candidate for the Degree of B.A. is required to make and sign the following

DECLARATION.

" Ego——— polliceor sancteque recipio me, pro meis viribus, studiosum fore communis hujus universitatis boni, et operam daturum ut ejus decus et dignitatem promoveam."

II. FOR THE DEGREE OF M.A.

1. Candidates, who must be Bachelors of Arts of at least three years standing, are required to prepare and submit to the Faculty of Arts, not less than two months before proceeding to the degree, a

Thesis on some Literary or Scientific subject previously approved by the Faculty.

The last day in the session of 1886-7 *for sending in Theses for M.A. will be Jan.* 30*th*, 1887.

2. All candidates, except those who have taken First Rank B.A. Honours, or have passed First Class in the Ordinary Examinations for the Degree of B.A., are required to pass an examination also, either in Literature or in Science, as each candidate may select.

(*a*) The subjects of the Examination in *Literature* are divided into two groups :—

A. —1. Latin. 2. Greek. 3. Hebrew.

B.—1. French. 2. German. 3. English.

(*b*) The subjects for the Examination in *Science* are divided into three groups :—

A.—1. Pure Mathematics (Advanced or Ordinary.) 2. Mechanics (including Hydrostatics.) 3. Astronomy. 4. Optics.

B.—1 Geology and Mineralogy. 2. Botany. 3. Zoology. 4. Chemistry.

C.—1. Mental Philosophy. 2. Moral Philosophy. 3. Logic. 4. History of Philosophy.

(*c*) Every Candidate in Literature is required to select two subjects out of one group in the Literary section, and one out of the other group in the same section for the Examination. Every Candidate in Science is required to select two out of the three groups in the Scientific section; and in one of the groups so chosen to select two subjects, and in the other group one subject for Examination.

(*d*) One of the subjects selected as above will be considered the principal subject, and the other two as subordinate subjects.

For further details of the Examination application must be made to the Faculty before the above date. For fees see § XI.

III. FOR THE DEGREE OF LL.D.

Candidates must be Master of Arts of at least twelve years standing. Every Candidate for the degree of LL.D. in Course is required to prepare and submit to the Faculty of Arts, not less than three months before proceeding to the degree, twenty-five printed copies of a

Thesis on some Literary or Scientific subject previously approved by the Faculty, and possessing such a degree of Literary or Scientific merit, and evidencing such originality of thought or extent of research as shall, in the opinion of the Faculty, justify it in recommending him for that degree.

Every Candidate for the Degree of LL.D. in Course is required to submit to the Faculty of Arts, with his Thesis, a list of books, treating of some one branch of Literature or of Science, satisfactory to the Faculty, in which he is prepared to submit to examination, and on which he shall be examined, unless otherwise ordered by vote of the Faculty. For Fees see § XI.

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§ V. SPECIAL PROVISIONS FOR CANDIDATES FOR HONOURS AND FOR PROFESSIONAL STUDENTS.

I. Candidates for Honours in the Second Year.

Candidates for Honours in the Second Year who have obtained Honours in the First Year may omit the lectures and examinations in either a Modern Language (or Hebrew) or Botany, giving notice of the subject at the beginning of the session.

II. Candidates for Honours in the Third Year.

Every Candidate for Honours in the Third Year must, in order to obtain exemptions, have passed the Intermediate Examination, and must in the Sessional Examination of the Second Year have taken first class in the subject in which he proposes to compete for Honours; such candidates shall be entitled in the Third Year to exemption from lectures and examinations in any one of the four "Ordinary" departments required by the general rule (see § III), except that in which he is a Candidate for Honours. A Candidate for Honours in the Third Year who has failed to obtain Honours shall be required to take the same examinations for B.A. as the ordinary undergraduates (see note below).

III. Candidates for B.A. Honours.

A Student who has taken Honours of the first rank in the Third Year and desires to be a Candidate for B.A. Honours, shall be required to attend two only of the courses of lectures given in the ordinary departments and to pass the two corresponding examinations only at the ordinary B.A. Examination. The

"Additional Department" required for the ordinary B.A. (see § IV.) forms part of the Honour course. A Student who has taken Second Rank Honours in the Third Year and desires to be a Candidate for B.A. Honours in the same subject shall be allowed to continue in the Fourth Year the study of the same departments that he has taken in the Third Year, but shall be required to take the same number of departments as in the Ordinary Course.

NOTE.—For subjects of "Ordinary" and "Additional" Departments see § III.

IV. Professional Students.

Students of the Third and Fourth Years, matriculated in the Faculties of Law, Medicine or Applied Science of the University, or in any affiliated Theological College, are entitled to exemption from the Additional Department or any one of the Ordinary Departments required in the Third and Fourth years. (For rule concerning "Special Certificates" see § VI.)

To be allowed these privileges in either year they must give notice at the commencement of the Session to the Dean of the Faculty of their intention to claim exemptions as Professional Students, and must produce at the end of the Session certificates of attendance on a full course of Professional Lectures during the year for which the exemption is claimed.

V. Students of the University attending Affiliated Theological Colleges.

1. Such Students, whether entered as Matriculated or Occasional, are subject to the regulations of the Faculty of Arts in the same manner as other students.

2. The Faculty will make formal reports to the Governing body of the Theological College which any such Students may attend, as to:—[1] their conduct and attendance on the classes of the Faculty; and [2] their standing in the several examinations; such reports to be furnished after the Christmas and Sessional Examinations severally, if called for.

3. Matriculated Students are allowed no exemptions in the course for the degree of B. A. until they have passed the Intermediate Examination; but they may take Hebrew in the First and Second Years, instead of French and German.

4. In the Third and Fourth Years they are allowed exemptions, as stated above.

*Any Student who, under any of the above rules, desires to take Experimental Physics, is required to take Mechanics and Hydrostatics also, in the Third Year.

§ VI. MEDALS, HONOURS, PRIZES AND CLASSING.

1. GOLD MEDALS will be awarded in the B.A. Honour Examinations to Students who take the highest Honours of the First Rank in the subjects stated below, and who shall have passed creditably the Ordinary Examinations for the Degree of B.A., provided they have been recommended therefor to the Corporation by the Faculty on the report of the Examiners :—

The *Henry Chapman Gold Medal*, for the Classical Languages and Literature.
The *Prince of Wales Gold Medal*, for Mental and Moral Philosophy.
The *Anne Molson Gold Medal*, for Mathematics and Natural Philosophy.
The *Shakespeare Gold Medal*, for the English Language, Literature and History.
The *Logan Gold Medal*, for Geology and other Natural Sciences.
The *Major Hiram Mills Gold Medal*, for a subject to be chosen by the Faculty from year to year.

In the event of there being no Candidate for any Medal, or of none of the Candidates fulfilling the required conditions, the Medal will be withheld, and the proceeds of its endowment for the year may be devoted to prizes in the subjects for which the Medal was intended. For details, see announcements of the several subjects below.

2. HONOURS, of First or Second Rank, will be awarded to those Matriculated Students who have successfully passed the Examinations in any Honour Course established by the Faculty (*N.B.—The Honour Course includes the Additional Department in each subject*), and have also passed creditably the ordinary Examinations in all the subjects proper to their year.

By an Order of the Lieutenant-Governor of Ontario in Council, Honours in this University confer the same privileges in Ontario as Honours in the Universities of that Province, as regards certificates of eligibility for the duties of Public School Inspectors, and as regards exemption from the non-professional Examination of Teachers for First-class Certificates for Grades "A and B.")

3. SPECIAL CERTIFICATES will be given to those candidates for B.A. who shall have been placed in the First Class at the ordinary B.A. Examination. The candidates must have obtained three-fourths of the maximum marks in the aggregate of the studies proper to their year, be in the First Class in not less than half the subjects, and have no Third Class. At this examination no candidate who has taken exemptions (see § V.) can be placed in the First Class unless he has obtained First Class in each of the departments in which he has been examined.

4. CERTIFICATES of High General Standing will be granted to those Matriculated Students of the first two years who have obtained three-fourths of the maximum marks in the aggregate of the Studies proper to their year, are in the First Class in not less than half the subjects, and have not more than one Third Class. In the Third Year the conditions are the same as for the Special Certificate for B.A.

5. PRIZES OR CERTIFICATES to those Matriculated Students who may have distinguished themselves in the studies of a particular class and have attended all the other classes proper to their year.

6. His Excellency the MARQUIS OF LANSDOWNE has been pleased to offer a GOLD MEDAL for the encouragement of the study of Modern Languages and Literature, with History, or for First Rank General Standing, as may be announced.

(*a*). The Regulations for the former are as follows :—

(1). The Subjects for competition shall be French and German, together with the History part of the present Honour Course for the Shakespeare Medal.

(2). The course of study shall extend over two years, viz., the Third and Fourth years.

(3). The successful Candidate must be capable of speaking and writing both languages correctly.

(4). There shall be examinations in the subjects of the course in both the Third and Fourth Years, at which Honours may be awarded to deserving Candidates.

(5). The general conditions of competition, and the privileges as regards exemptions, shall be the same as for the other Gold Medals in the Faculty of Arts

(6). Students from other Faculties shall be allowed to compete, provided they pass the examinations of the Third and Fourth Years in the above subjects.

(7). Candidates desiring to enter on the Third Year of the Course, who have not obtained First Class standing at the Intermediate or Sessional Examinations of the Second Year in Arts, are required to pass an examination in the work of the first two years of the course in Modern Languages, if called on to do so by the Professors.

(8). The subjects of Examination shall be as follows :—

I. FRENCH.—*Third Year.*

Racine :—Phèdre ; Les Plaideurs. Boileau :—L'Art Poétique. Pascal :—Les Pensées. La Bruyère :—Les Caractères. Ampère :—Formation de la Langue française.

In addition to the ordinary and additional departments as stated in the Calendar.

Fourth Year.

Molière :—Le Misanthrope.
Corneille :—Cinna.
La Rochefoucauld :—Les Maximes.
Montaigne :—Les Essais.
Auguste Brachet :—Grammaire historique.
Etudes des Anciens textes français (Demogeot).

In addition to the ordinary and additional departments as stated in the Calendar

II. GERMAN.—*Third Year.*

Wieland.—Oberon.

Schleicher.—Die Deutsche Sprache (History of the German Language.)

History of German Literature from 1750, being a critical review of the principal writers of the classical period. The men of 'Sturm und Drang.' The Romantic Schools. Modern Lyric Poets. (Gostwick and Harrison's Outlines.)

With the ordinary and additional departments prescribed for this year.

Fourth Year.

A special study of Goethe's 'Faust' (Part I.)
Selections from Heine's Lyrical Poems.

Schleicher.—Die Deutsche Sprache.

German Literature from 1150 to 1350 :—Mediæval classic writers—Epic, Lyric and Didactic Poetry—(Kurz, Leitfaden zur Geschichte der deutschen Literatur).

With the ordinary and additional departments prescribed for this year (excepting 'Moschzisker.')

III. HISTORY.—(*See Honour Course for Shakespeare Medal.*)

The competitive Examination of the Fourth Year will include the work of both the Third and Fourth Years.

(*b*) The Regulations for the Gold Medal to be awarded for First Rank General Standing, are as follows :—

(1). The successful candidate must take no exemptions or substitutions of any kind, whether Professional or Honour, in the Ordinary B. A. Examination.

(2). He shall be examined in the following subjects :—

(*a*) *Classics* (both languages); (*b*) *Mixed Mathematics* (both divisions) (*c*) *Mental and Moral Philosophy;* and any *two* of the following subjects, or any *one* of them with its Additional Department :—(*d*) Natural Science, (*e*) Experimental Physics, (*f*) English and History, (*g*) French, (*h*) German.

(3). His answering must satisfy special requirements laid down by the Faculty.

(4). The same candidate cannot obtain the Gold Medal for First Rank General Standing, and also a Gold Medal for First Rank Honours.

7. THE NEIL STEWART PRIZE of $20 is open to all Undergraduates of this, and also to Graduates of this or any other University, studying Theology in any College affiliated to this University, under the following rules :—

(1). The prize will not be given for less than a thorough examination in Hebrew Grammar passed in the First Class, in reading and translating the Pentateuch and such poetic portions of the Scripture as may be determined.

(2). In case competitors should fail to attain the above standard the prize will be withheld, and a prize of Forty Dollars will be offered in the following year for the same.

[Course for the present year :—Hebrew Grammar (Gesenius) ; Translation and analysis of the first ten chapters of Genesis ; the Prophet Habakkuk (the whole book) ; and the first five Psalms.]

3. There will be two Examinations of three hours each ; one in Grammar and the other in Translation and Analysis.

The Prize, founded by the late Rev. C. C. Stewart, M.A., and terminated by his death, was re-established by the liberality of the late Neil Stewart, Esq., of Vankleek Hill, and will be offered for competition next Session.

8. EARLY ENGLISH TEXT SOCIETY'S PRIZE.—This prize, the annual gift of the Early English Text Society, will be awarded for proficiency in (1) Anglo-Saxon (2) Early English before Chaucer.

The subjects of Examination will be :—

(1) The Lectures of the Third and Fourth Years on Anglo-Saxon.

(2) Specimens of Early English (Clarendon Press Series, ed. Morris and Skeat,) Part II., A.D., 1298—A.D., 1393. The Lay of Havelok the Dane (Early English Text Society, ed. Skeat.)

9. NEW SHAKESPEARE SOCIETY'S PRIZE. This Prize the annual gift of the New Shakespeare Society, will be awarded for a critical knowledge of the following plays of Shakespeare :—

Hamlet ; Macbeth ; Othello ; King Lear.

10. The names of those who have taken Honours, Certificates or

Prizes will be published in order of merit; with mention, in the case of Students of the First and Second Years, of the schools in which their preliminary education has been received.

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§ VII. LICENSED BOARDING-HOUSES.

(*Regulations for Students in Arts, passed by the Corporation, April, 1875.*)

1. All Students under 21 years of age, not residing with parents or guardians, nor belonging to a Theological College, shall reside in licensed boarding-houses, unless they produce written authority from parents or guardians to reside elsewhere.

2. Persons applying for a license to keep boarding-houses shall produce evidence satisfactory to the Principal as to their character and fitness, and the suitability of the house for the health and comfort of the Students. They shall also supply him with a statement of charges.

3. The keeper of the boarding-house shall report immediately to the Principal the entrance or departure of any Student, and any instance of immorality or disorderly conduct.

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§ VIII. ATTENDANCE AND CONDUCT.

All Students shall be subject to the following regulations for attendance and conduct:—

1. A Class-book shall be kept by each Professor or Lecturer, in which the presence or absence of Students shall be carefully noted; and the said Class-book shall be submitted to the Faculty at all their ordinary meetings during the Session.

2. Each Professor shall call the roll immediately at the beginning of a lecture. Credit for attendance on any lecture may be refused on the grounds of lateness, inattention or neglect of study, or disorderly conduct in the class-room. In the case last mentioned the student may, at the discretion of the Professor, be required to leave the class-room. Persistence in any of the above offences against discipline, after admonition by the Professor, shall be reported to the Dean of Faculty. The Dean may, at his discretion, reprimand the student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from Classes.

3. Absence from any number of lectures can only be excused by necessity or

duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

4. While in the College, or going to or from it, students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the College buildings or grounds may admonish the student, and, if necessary, report him to the Dean.

5. Every student is required to attend regularly the religious services of the denomination to which he belongs, and to maintain, without as well as within the walls of the College, a good moral character.

6. When students are brought before the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, impose fines, disqualify from competing for prizes and honours, suspend from Classes, or report to the Corporation for expulsion.

7. Any student who does not report his residence on or before Nov. 1st in each year is liable to a fine of one dollar.

8. Any student injuring the furniture or buildings will be required to repair the same at his own expense, and will, in addition, be subject to such other penalty as the Faculty may seem fit to inflict.

9. All cases of discipline involving the interest of more than one Faculty, or of the University in general, shall be immediately reported to the Principal, or, in his absence, to the Vice-Principal.

[NOTE.—All students are required to appear in Academic dress while in or about the College buildings. Students are requested to take notice that petitions to the Faculty on any subject, cannot, in general, be taken into consideration except at the regular meetings, appointed in the Calendar.]

§ IX. LIBRARY.

Extracts from the Regulations.

1. The Books in the Library are classed in two divisions :—1st, Those which may be lent ; and, 2nd, those which may not, under any circumstances, be removed from the Library. The classification shall be determined by the Librarian.

2. Students in the Faculty of Arts or of Applied Science, who have paid the Library fee, may borrow books on depositing the sum of $5 with the Bursar, which deposit, after the deduction of any fines due, will be repaid at the end of the Session on the certificate of the Assistant Librarian that the books have been returned uninjured.

3. Students may borrow not more than three volumes at one time, except on the recommendation in writing of a Professor for specified books, and must return them within two weeks, on penalty of a fine of 5 cents a volume for each day of detention. An additional deposit of $4 entitles a student to borrow two extra volumes.

4. A student incurring fines beyond the sum-total of $1 shall be debarred the use of the Library until they have been paid.

5. Any volume, or volumes, lost or damaged by any person shall be replaced or paid for at such rates as the Library Committee may direct; and such rate of payment shall be determined by the value of the book itself, or of the set to which the volume belongs.

6. Graduates in any of the Faculties, on making a deposit of $5, are entitled to the use of the Library, subject to the same rules and conditions as students; but they are not required to pay the annual Library fee.

7. Members of the McGill College Book Club, on presenting annually a certificate of their membership, are by a special regulation of Corporation entitled to the use of the Library on the same conditions as Graduates, but they are not required to make a deposit.

8. Students in the Faculties of Law and Medicine, who have paid the Library fee to the Bursar, may read in the Library, and, on depositing the sum of $5, with the Bursar, may borrow books on the same conditions as students in Arts. They are required to present their Matriculation Tickets to the Bursar and to the Librarian or Assistant Librarian.

9. Persons not connected with the College may consult Books in the Library on obtaining an order from any of the Governors, or from the Principal, or the Dean of the Faculty of Arts or of Applied Science, or from any of the Professors in the said Faculties. Donors of books or money to the amount of Fifty dollars may at any time consult books on application to the Librarian.

10. The Library is kept open from 9 a.m. to 4 p.m. daily, and no person shall be allowed in the Library except during these hours.

11. No person, other than the Librarian and his assistants, is allowed to enter the alcoves, or to take down books from the shelves, except members of Corporation, and Professors, or those whom any of the above may accompany personally.

12. A person desiring to read or to borrow a book, which he has ascertained from the Catalogue to be in the Library, will fill up one of the blank forms provided for Readers and Borrowers respectively, and hand it to the Assistant Librarian who will thereupon procure him the book.

13. Readers must return the books they have obtained to the Assistant Librarian before leaving the Library.

14. No conversation is permitted in the Library.

§ X. PETER REDPATH MUSEUM.

1. The Museum will be open every lawful day from 9 a.m. till 5 p.m , except when closed for any special reason by order of the Principal or Committee.

2. Students will obtain tickets of admission from the Principal on application.

3. Students will enter by the front door only, except when going to lectures.

4. Any Student wilfully defacing or injuring specimens, or removing the same, will be excluded from access to the Museum for the Session.

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§ XI. FEES.

Matriculation Fee for the First Year (to be paid in the Year of Entrance only)	$4 00
For the Second Year (exigible from Students who enter in the Second Year, and also from those who have failed in the First Year and re-enter in the Second Year on Examination)	6 00
Sessional Fee	20 00
Library Fee	4 00
Gymnasium Fee	2 50

Undergraduates are required to pay all the above fees.

Partial Students, viz., those taking three or more Courses of Lectures, are required to pay the Matriculation, Library and Gymnasium Fees, and $5 for each Course which they attend, or $20 for all the courses.

Occasional Students taking one course of Lectures only, are required to pay $5 per Session for that course.

Occasional Students taking two courses of Lectures are required to pay the Library Fee and $5 for each course.

The Matriculation, Library, and Gymnasium Fees are exigible from Students holding exemptions from Sessional Fees.

Graduates in Arts are allowed to attend, without payment of fees, all lectures except those noted as requiring a special fee.

The fees must be paid to the Secretary and the tickets shown to the Vice-Dean within a fortnight after the commencement of attendance in each session. In case of default, the Student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty and on payment of a fine of $2.

[All fines are applied to the purchase of books for the Library.]

Fee for the Degree of B.A.	.....	$5 00
" " "	*M.A.*	10 00
" " "	*LL.D.*	50 00

If the Degree of M.A. be granted, with permission to the Candidate, on special grounds, to be absent from Convocation, the fee is.....$25.00.

The B.A. fee must be paid before Examination.

The M.A. fee must be sent to the Secretary of the University at the same time that the Candidate sends his Thesis to the Dean of the Faculty. This is a condition essential to the reception of his application.

A Bachelor of Arts or Master of Arts, intending to proceed to a higher Degree, is required, in addition to the above, to keep his name on the books of the University, by the annual payment of a fee of $2 to the Registrar of the University (which payment suffices also for Registration under Chap. III. of the Statutes of the University). He may, if he prefer it, compound for the above annual fees, by the payment of $6 in one sum for the Master's Degree, or $30 for the Doctor's Degree, on or before the date of application for the Degree.

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§ XII. COURSES OF LECTURES.

I. ORDINARY COURSE.

1. CLASSICAL LITERATURE AND HISTORY.

(Major H. Mills Professorship of Classics.)
Professor, Rev. G. Cornish, M.A., LL.D.
Lecturer, J. M. Mulgan, M.A.

Greek.

First Year.—Plutarch, Lives of the Gracchi.

Second Year.—Plato, Apology and Crito.

Third Year.—Lysias.—Contra Eratosthenem.
Æschylus.—Prometheus Vinctus.

Fourth Year.—Thucydides.—Book VI.

Latin.

First Year.—Virgil.—Æneid, Book VI.
Sallust.—Catiline.
Latin Prose Composition.

Second Year.—HORACE.—EPISTLES, Book I.
TACITUS.—GERMANIA, Chaps. I.–XXVII.
Latin Prose Composition.

Third Year.—JUVENAL.—SATIRES VIII. and XIII.
LIVY.—Book XXI.
Latin Prose Composition.

Fourth Year.—TACITUS.—ANNALS, Book II.
Latin Prose Composition.

Text-books—Greek Grammar, Goodwin. Latin Prose Composition:—First Year, Arnold's Latin Prose by Bradley.—Second Year, Latin Prose through English Idiom by Abbott.

In the work of the Class the attention of the Student is directed to the collateral subjects of History, Antiquities and Geography; also to the grammatical structure and affinities of the Greek and Latin Languages; and to Prosody and Accentuation.

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2. ENGLISH LANGUAGE AND LITERATURE.

(MOLSON PROFESSORSHIP.)

Professor, CHAS. E. MOYSE, B.A.

Lecturer, PAUL T. LAFLEUR, B.A.

First Year.—English Language and Literature. Three Lectures a week.
The Lectures on Language exemplify the more important features in the history of English: Exercises on Analysis are given in once a week. The Lectures on Literature indicate the development of English Literature from its commencement to the rise of the Elizabethan Drama. The use of Prof. Henry Morley's Charts of English Literature is recommended. Students who have leisure will be advised as to their reading.

Second Year.—A period of English Literature, and one play of Shakespeare.
One Lecture a week before Christmas; two Lectures a week after Christmas.
During the Session of 1886-7, the Literature of the Elizabethan and Stuart periods will form the subject of the Lectures. Shakespeare—Tempest. [Clarendon Press Edition.]

Third Year.—Chaucer's Prologue to Canterbury Tales.
Lecture once a week.
Text-book, Chaucer's Prologue, &c., ed. Morris.

Additional Department.—Early English.—Morris and Skeat, extt. I.-IX. inclusive.
Milton ; Comus ; Areopagitica.
Burke—Thoughts on Present Discontents ; Reflections on French Revolution.
History—Bryce's Holy Roman Empire, as on page 14

Fourth Year.—History.
The Lectures will be a sketch of general European History from the fall of the Roman Empire to the end of the Eighteenth Century. The use of Prof. Nicol's Tables of European History is recommended.

Additional Department.—Anglo-Saxon ; Sweet's Anglo-Saxon Reader, (4th edition Extt. IV. VIII., and XXI..
Spenser—Faerie Queene, Book I.
Pope—Essay on Criticism, Essay on Man.
Tennyson—In Memoriam.
History—Buckle, Hist. of Civ. in England, 4 caps.

(The Lectures of the Additional Department in each year are comprised in the Honour Lectures).

3. MENTAL AND MORAL PHILOSOPHY.

(JOHN FROTHINGHAM PROFESSORSHIP OF MENTAL AND MORAL PHILOSOPHY.)

Professor, REV. J. CLARK MURRAY, LL.D.

Second Year.—First Term.—Elementary Psychology (Text-book :—Murray's Handbook of Psychology, Book I.). Second Term.—Logic (Text-book :—Jevons' Elementary Lessons in Logic).

Third Year.—*Additional Department.*—Advanced Logic and Psychology (Text-books :—Mill's System of Logic, Books I.-III. ; and Murray's Handbook of Psychology, Book II.)

Fourth Year.—First Term.—The Psychological Basis of Ethics. Second Term.—Ethics Proper, comprising the elementary principles of Jurisprudence and Political Science. *Additional Department.*—Modern Philosophical Systems.

In the Third and Fourth Years Students are also required to write occasional Essays on Philosophical Subjects.

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4. FRENCH LANGUAGE AND LITERATURE.

Professor, P. J. DAREY, M.A., B.C.L., Officier d'académie.

First Year.—DAREY, Principes de Grammaire française.
LA FONTAINE, Les Fables, livres I. et II.
MOLIERE, Les Bourgeois gentilhomme.
Dictation. Colloquial exercises.

Second Year.—DAREY, Principes de Grammaire française.
C. DELAVIGNE, Les Enfants d'Edouard.—RACINE, Andromaque.
Translation into French :—DR. JOHNSON, Rasselas.
CONTANSEAU, Précis de littérature française, from the beginning to the end of the XVII century.
Dictation. Parsing. Colloquial exercises.

Third Year.—CORNEILLE, Polyeucte.
Cogery :—Third French course.
Translation into French :—Dr. Johnson, Rasselas.
French Composition. Dictation.
BONNEFON, Les Ecrivains célèbres de la France au XVIII. siècle.

Additional Department.—LA FONTAINE, Les Fables.
RACINE, Les Plaideurs.
PAUL ALBERT, Littérature du XVIIe siècle.
Translation into French :—GOLDSMITH, The Vicar of Wakefield.

Fourth Year.—Cogery :—Third French course.
BONNEFON—Les Ecrivains modernes de la France.
Translation into French :—MACAULAY, Warren Hastings.
French Composition. Dictation.
CORNEILLE, Polyeucte.

Additional Department.—
AUG. BRACHET, Grammaire historique.
PAUL ALBERT, depuis le commencement de la langue française jusqu'au XVIIe. siècle.
EMILE SOUVESTRE.—Un Philosophe sous les toits.
Translation into French :—As You Like It.

The Lectures in the Third and Fourth Years are given in French.

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5. GERMAN LANGUAGE AND LITERATURE.

Professor, C. F. A. MARKGRAF, M.A.

First Year.—Schmidt's German Guide (1st Course). Adler's Progressive German Reader (selections from Sections 1 and 2); Translations, oral and written.

Second Year.—Schmidt's German Guide (2nd Course). Adler's Progressive German Reader (selections from Sections 3—5). Translations, oral and written. Parsing.

Third Year.—Schmidt's German Guide (3rd Course). Chamisso, Peter Schlemihl; Lessing, Minna von Barnhelm. History of German Literature from the earliest periods to the close of the 18th century (a brief survey by the Professor). Translation into German.

Additional Department.—Koerner, Leyer und Schwert ; Schiller, Wilhelm Tell. Translation from English Prose writers.

Fourth Year.—Whitney's German Grammar (excerpts) ; Schiller, Wallenstein. Moschzisker's Guide to German Literature (Epoch VII., Sections II —VI. ; 1750-1850).

Translation from English Prose writers. German Composition.

Additional Department.—Whitney's Grammar (cont.).
Goethe, Iphigenie auf Tauris.
Lessing, Nathan der Weise.
Schiller, Geschichte des dreissigjahrigen Krieges.

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6. HEBREW AND ORIENTAL LITERATURE.

Rev. Professor COUSSIRAT, B.A., B.D., Officier d'académie.

Elementary Course.—Reading and Grammar with oral and written exercises in Orthography and Etymology.—Translation and Grammatical Analysis of select sentences of the Scriptures.—Text-Book, J. Robert Wolfe :—A Practical Hebrew Grammar.

Intermediate Course.—Grammar.—Translation from Genesis, chap. I. ; Exodus, chap. XX. ; Deuteronomy, chap. XXXII.—Exercises :—Hebrew into English, and English into Hebrew.—Syntax.—Reading of the Masoretic Notes.

Advanced Course.—Gesenius' Grammar.—Exercises continued.—Translation. Reading of the Masoretic Notes.

First Part :—Isaiah, chaps. I., VII., LIII., LV. ; Psalms I., XLII., LI., LV., CIII.

Second Part :—Job, chaps. I., IV., XIV. ; Ecclesiastes, chaps. I., II., III., XII. ; Jeremiah, chap. I.

Additional Department (*Optional*) *:*—(*For Third and Fourth Years.*)
The Chaldee Language :—Riggs' Grammar and Translation.
The Chaldee portions of Scripture. Targum of Onkelos and T. Yerushalmi.
The Syriac Language :—Grammar (Uhlemann's) and Translation.

The course comprises Lectures on the above Languages and their Literature in particular, with a general notice of the other Oriental Languages, their genius and peculiarities. Comparative Philology, affinity of Roots, &c., also receive due attention, while the portions selected for translation will be illustrated and explained by reference to Oriental manners, customs, history, &c.

7. MATHEMATICS AND NATURAL PHILOSOPHY.

(PETER REDPATH PROFESSORSHIP OF NATURAL PHILOSOPHY.)

Professor, ALEXANDER JOHNSON, M.A., LL.D.

In the ordinary work of the First Year assistance will be given by G. H. Chandler, M.A., Professor of Practical Mathematics in the Faculty of Applied Science.)

MATHEMATICS.—(*First Year.*)—Arithmetic—Euclid, Books 1, 2, 3, 4, 6, with Definitions of Book 5 (omitting propositions 27, 28, 29, of Book 6), Todhunter's Edition—Colenso's Algebra (Part 1.) to end of Quadratic Equations.—Galbraith and Haughton's Plane Trigonometry to beginning of solution of Plane Triangles.

MATHEMATICS.—(*Second Year*)—Arithmetic, Euclid, Algebra, and Trigonometry as before.—Nature and use of Logarithms.—Remainder of Galbraith and Haughton's Plane Trigonometry.

The course for the Intermediate University Examination consists of the Mathematics of the first two years.

MATHEMATICAL PHYSICS.—(*Third Year*)—Galbraith and Haughton's Mechanics, viz., *Statics*, First 3 chapters, omitting sec. 5, chapter I., and sect. 21, chapter II.; *Dynamics*, subjects of the First 5 chapters. Galbraith and Haughton's Hydrostatics.

Additional Department.—Optics (Galbraith and Haughton). Descriptive Astronomy (Lockyer's Elementary Astronomy, English edition; First three chapters, viz., The Stars and Nebulæ; The Sun; The Solar System). Students are recommended to use with this an "Easy Guide to the Constellations," by Gall.

ASTRONOMY.—(*Optional*).—*Fourth Year*—Galbraith and Haughton's Astronomy—The lectures on this subject will be given before Christmas. This, with Optics, forms the Additional Department for the Fourth Year (see note on B A. Examination).

EXPERIMENTAL PHYSICS.—(*Third and Fourth Years*). 1.—*Light.*—Theories. —Reflection.—Refraction.—Dispersion.—Interference and Diffraction.—Double Refraction.—Polarization. 2.—*Heat.*—Dilatation of Solids, Liquids and Gases.—Specific and Latent Heat.—Radiation and Conduction.—Mechanical Theory of Heat. 3.—*Electricity*—Statical and Dynamical:—including Electro-Magnetism—Magneto-Electricity—Thermo-Electricity—Diamagnetism—Electric Measurements —Practical Application to Telegraphy, &c. 4.—*Magnetism.* 5.—*Sound.*—Theory of Undulations—Production and Propagation of Sound—Vibrations of Strings, Rods and Plates—Vibrations of Fluids—Musical Sounds. Text-book:—Ganot's Treatise translated by Atkinson. This Course extends over two Years.

The Subjects for the Session 1886-87 are Electricity, Magnetism and Sound.

The Lectures in Mathematical and Experimental Physics will be illustrated by Apparatus, of which the College has a very good collection.

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8. GEOLOGY AND NATURAL HISTORY.

(LOGAN PROFESSORSHIP OF GEOLOGY).

Professor Sir J. WM. DAWSON, C.M.G., LL.D., F.R.S., F.G.S.

B. J. HARRINGTON, B.A., Ph.D., F.G.S., Professor of Mineralogy.

ZOOLOGY AND PALÆONTOLOGY. (*Third Year*).—Elements of Animal Physiology. Classification of Animals. Characters of the Classes and Orders of Animals, with Recent and Fossil Examples, taken as far as possible from Canadian Species. Demonstrations in the Museum.

Text Book.—Dawson's Hand-book of Zoology, with books of reference.

A prize of $25 will be given by the Professor for the best collection of specimens of fossils or of any group of animals, accompanied with a catalogue of names and localities and (if fossils) of formations. The Prize Collections or duplicates of them to remain in the Museum if required. Candidates must be Students of Zoology of the previous session.

MINERALOGY AND GEOLOGY.—(*Fourth Year.*)

1. *Mineralogy and Lithology.*—An elementary course, in which attention is given more particularly to such minerals and rocks as are important in Geology or useful in the Arts.

2. *Stratigraphy, Chronological Geology and Palæontology.* Data for determining the relative ages of Formations. Classification according to age. Fauna and Flora of the successive periods. Geology of British America. The lectures will be fully illustrated with specimens, and will be accompanied with demonstrations in the Museum and excursions for field work.

Text-books.—Dana's Manuals of Mineralogy and Geology; Dawson's Lecture Notes on Geology.

Students in Natural History are entitled to tickets of admission to the Museum of the Natural History Society of Montreal.

ADDITIONAL DEPARTMENT.—(*Third Year.*)

MINERALOGY, as in the Honour Course of the Third Year, omitting the Blowpipe work.

ADDITIONAL DEPARTMENT.—(*Fourth Year.*)

Geology of the Dominion of Canada (Part of Honour Course). Special studies in Palæontology.

9. BOTANY.

Professor, D. P. PENHALLOW, B. Sc.

Second Year.—General Morphology and Classification. Descriptive Botany. Flora of Canada. Nutrition and reproduction of plants. Elements of Histology.

Text-books.—Gray and Bessey.

A prize of $20 will be given by the Professor for the best collection of plants and the greatest proficiency in their determination. The collections will be returned after examination. Candidates must be Students of Botany of the previous Session.

ADDITIONAL DEPARTMENT.—(*Third Year.*)

Two lectures with practical work, each week.

Course.—Vegetable Histology and Micro-Chemistry of Plants, Microscopical Manipulations.

Text-Books:—Goodale's Vegetable Histology and Poulsen's Botanical Micro-chemistry.

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10. CHEMISTRY.

(DAVID J. GREENSHIELDS PROFESSORSHIP OF CHEMISTRY AND MINERALOGY).

Professor, B. J. HARRINGTON, B.A., Ph.D.

First Year.—A course of Lectures preparatory to the Course in Natural Science. The Lectures are illustrated by experiments, and treat of the Elementary Constitutions of matter, the Laws of Chemical Combination by weight and volume, the Atomic Theory, Quantivalence, Chemical Formulæ and Equations, Chemical Attraction, characteristics of Acids, Bases, and Salts, Compound Radicals, the preparation and properties of the non-metallic and metallic Elements, and many of their compounds, &c. A few Lectures are also devoted to the consideration of some of the more important Organic Substances, including Starch, Sugars, the Vegetable Acids, and Alkaloids, Alcohol, &c. During the Course attention is called, as far as possible, to the relations of Chemistry to various manufacturing industries.

Students in Arts may attend the course in Practical Chemistry with the First Year in Applied Science on payment of a fee of five dollars.

Text-book—Nichol's Abridgment of Eliot and Storer's Manual of Chemistry.

ADDITIONAL DEPARTMENT.—(*Third Year.*)

(*Theoretical or Organic Chemistry*).—One lecture a week. (*Practical Chemistry*).— Qualitative Analysis, as in Jones' Junior Course of Practical Chemistry, two afternoons a week.

ADDITIONAL DEPARTMENT.—(*Fourth Year.*)

A course of Practical Chemistry, in continuation of that of the Third Year.

NOTE—New chemical laboratories, capable of accommodating about fifty students, have recently been erected and afford excellent facilities for practical work.

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11. METEOROLOGY.

Superintendent of Observatory, C. H. MCLEOD, Ma. E.

Instructions in Meteorological Observations will be given in the Observatory, at hours to suit the convenience of the senior students.

Certificates will be granted to those students who pass a satisfactory examination on the construction and use of Meteorological Instruments and on the general facts of Meteorology.

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12. ELOCUTION.

MR. JOHN ANDREW, Instructor.

Students are recommended by the Faculty to avail themselves of the Instructions of Mr. Andrew, who will make arrangements for evening classes to meet during the Session.

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13. GYMNASTICS.

MR. FREDERICK S. BARNJUM, Instructor.

The classes will meet at the University gymnasium, at hours to be announced at the commencement of the Session. The Wicksteed gold, silver and bronze medals (the gift of Dr. R. J. Wicksteed) are offered for competition to students of the graduating class, and to students who have had instruction in the gymnasium for two sessions, the gold medal to the former, the silver and bronze medals to the latter. (See Regulations appended.)

II. HONOUR COURSES.

1. CLASSICS.

B.A. HONOURS, BEING THE HONOUR COURSE FOR STUDENTS OF THE THIRD AND FOURTH YEARS.

Candidates for B.A. Honours in Classics will be examined in the following subjects:—

I. GREEK.

Plato.—Republic, Books I. and II.
Aristotle.—The Poetics.
Herodotus.—Books VIII. and IX.
Thucydides.—Books VI. and VII.
Xenophon.—Hellenics, Books I. and II.
Hesiod.—Works and Days.
Æschylus.—Prometheus Vinctus.
" Seven against Thebes.
Sophocles.—Antigone.
Euripides.—Medea.
Aristophanes.—The Frogs.
Pindar.—Olympic Odes.
Theocritus.—Idylls I. to VI.
Demosthenes.—De Corona.
Æschines.—Contra Ctesiphontem.

II. LATIN.

Livy.—Books XXI., XXII. and XXIII.
Tacitus.—Annals, Books I. and II.
" Histories, Book I.
Virgil.—Æneid, Books I to IV.
Plautus.—Aulularia.
Terence.—Adelphi.
Horace.—Satires, Book I.
Juvenal.—Satt. VIII. and X.
Persius.—Satt. V. and VI.
Cicero.—De Imperio Cn. Pompeii.
" De Officiis.

III. HISTORY OF GREECE AND ROME.

Text-books:—

1. Grote's History of Greece.
2. Arnold's History of Rome.

3. Mommsen's History of Rome.
4. Mahaffy's History of Greek Literature.
5. Cruttwell's History of Roman Literature.
6. Cruttwell and Banton's Specimens of Roman Literature.
7. Donaldson's Theatre of the Greeks.

IV. COMPOSITION.

1. Composition in Greek and Latin Prose.

1. General paper on Grammar, History and Antiquities.

The Examination for B.A. Honours will extend over four days, in the morning from 9 to 12, and the afternoon 2 to 5.

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2. MENTAL AND MORAL PHILOSOPHY.

The Lectures are devoted mainly to Ancient Philosophy in the Third Year, to Modern Philosophy in the Fourth. In addition to the Lectures, the Examination will comprise the first four of the following subjects in the Third Year, the last eight in the Fourth :—

1. Schwegler's History of Philosophy, Chapters 1-21 inclusive.
2. Cicero's De Natura Deorum.
3. Fraser's Selections from Berkeley.
4. Thomson's Outlines of the Laws of Thought.
5. Aristotle's Nicomachean Ethics.
6. Descartes' Method and Meditations.
7. Spinoza's Ethics.
8. Watson's Philosophy of Kant in Extracts.
9. Murray's Outline of Hamilton's Philosophy.
10. Mill's System of Logic.
11. Spencer's First Principles.
12. Maine's Ancient Law.

N.B.—The class-essays of candidates for honours are expected to display superior ability in the discussion of philosophical subjects.

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3. ENGLISH LANGUAGE, LITERATURE AND HISTORY.

The examination for Honours in the Third Year will be on the works in the following course :—

Language.—Anglo-Saxon.—Portions of Sweet's Anglo-Saxon Reader.

Early English.—Specimens of Early English (Clarendon Press Series, ed. Morris and Skeat), Part II , extt. I.-IX. inclusive.

Literature.—Chaucer.—The Prologue to the Canterbury Tales, The Knightes Tale (Clarendon Press Series, ed Morris).

Spenser.—The Faerie Queene, Book I.

Sidney.—An Apologie for Poetry. (ed. Arber, to be obtained by post from the Editor, 1 Montague Road, Edgbaston, Birmingham, price 6d.)

Milton.—Shorter English Poems; Areopagitica (ed. Hales).

Dryden.—Annus Mirabilis; Absalom and Achitophel, Pt. I. The Preface to the "Fables."

Wordsworth.—Prelude (Moxon's edition).

Leslie Stephen—English Thought in the Eighteenth Century, vol. II cap. X., sections V.-X., inclusive.

History.—The Lectures on Constitutional History.

Hallam.—Middle Ages, caps. 1, 3, 5, 9.

Macaulay.—Vol. I., cap. 1.

Lectures on the Honour Subjects of the Third Year.

Language.—Anglo-Saxon.—The essentials of the Anglo-Saxon Language and Literature. Text-book—Sweet's Anglo-Saxon Reader (Clarendon Press Series.)

Literature.—A course on some of the special Honour subjects.

History.—Honour students are required to attend the Fourth Year course of lectures on European History.

B.A. HONOUR COURSE.

For B.A. Honours, the examination will be on the following subjects:

Language.—Anglo-Saxon—Portions of Sweet's Anglo-Saxon Reader and of Beowulf, (ed. Harrison and Sharp).

Early English—Specimens of Early English (Clarendon Press Series, ed. Morris & Skeat), Part II., ext. X.-XX., inclusive.

Literature—Shakespeare—Love's Labour's Lost, A Midsummer Night's Dream, Hamlet.

Sir Thos. More.—Utopia, (ed. Arber, price 1s).

George Villiers, Duke of Buckingham.—Rehearsal. (ed. Arber price 1s).

Pope—Essay on Criticism, Essay on Man.

Campbell—The Pleasures of Hope.

Shelley—Revolt of Islam.

Tennyson—Idylls of the King, In Memoriam.

Matthew Arnold—Essays in Criticism (the second).

History.—The lectures of the Fourth Year.

Freeman.—Growth of the English Constitution.

Freeman.—Historical Geography of Europe, caps. 1, 8, 9, 11, 12.

Macaulay, vol. I. cap. 3.

*See Third Year Honour Course.

Lectures on the Honour Subjects of the Fourth Year.

Language.—Anglo-Saxon—Sweet's Anglo-Saxon Reader, and Beowulf, (ed. Harrison and Sharp.)

Literature.—A course on these special Honour subjects, viz. :—the three prescribed plays of Shakespeare ; Modern Poetry, with special reference to Tennyson's Idylls of the King, and In Memoriam.

History.—Honour Students are required to attend the course of lectures on Constitutional History.

4. MATHEMATICS AND PHYSICS.

MATHEMATICS.—(*First Year*).—McDowell's Exercises on Modern Geometry, &c.—Wood's Algebra—Todhunter's Theory of Equations (selected course).

The Honour lectures in the First Year begin after Christmas. Candidates will be examined on the first half of McDowell's Exercises before admission to them.

MATHEMATICS —(*Second Year*).—Hind's Plane and Spherical Trigonometry—Salmon's Conic Sections, chapters, 1, 2, 3, 5, 6, 7, and 10 to 13, inclusive. —Williamson's Differential and Integral Calculus (selected course.)

MATHEMATICAL PHYSICS.—(*Third Year.*)—Minchin's Statics, Vol. I. Williamson & Tarleton's Dynamics, chaps. 1 to 8 inclusive, (Dynamics of a Particle).—Besant's Hydromechanics, Part I., Chaps. 1, 2, 3, 7.—Parkinson's Optics.—Godfray's Astronomy.

B.A. HONOUR COURSE.

PURE MATHEMATICS.—Williamson's Differential and Integral Calculus.—Boole's Differential Equations (selected course).—Salmon's Geometry of three Dimensions (selected course).

MECHANICS.—Minchin's Statics, except last chapter.—Williamson & Tarleton's Dynamics (the whole, including the dynamics both of Rigid Bodies and of a Particle).—Routh's Dynamics of a Rigid Body (for reference).—Besant's Hydromechanics.

ASTRONOMY AND OPTICS.—Godfray's Astronomy. Parkinson's Optics.

PHYSICAL ASTRONOMY.—Godfray's Lunar Theory, or Cheyne's Planetary Theory.

Newton's Principia, Lib. I., Sects. 1, 2, 3, 9, and 11.

LIGHT.—Lloyd's Wave Theory of Light.

ELECTRICITY AND MAGNETISM.—Ordinary Course, with Cumming's Theory of Electricity and Maxwell's Elementary Electricity.

HEAT,
ACOUSTICS, } As in ordinary course.

Engineering students may be candidates for Honours.

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5. NATURAL HISTORY AND GEOLOGY.

THIRD YEAR.

(1) *Mineralogy.*—Crystallography. Physical properties of minerals dependent upon light, electricity, state of aggregation, etc. Chemical composition. Principles of classification. Description of species important as constituents of Rocks, Blowpipe Analysis and Determinative Mineralogy.

(2) *Lithology.*—Classes of Rocks, Texture and Composition. Description of the more commonly occurring Rocks.

(3) Directions for collection and study in the vacation.

B.A. HONOUR COURSE.

(1) *Mineralogy and Lithology.*—Description of mineral species, particular attention being called to the Economic Minerals of Canada. Calculation of mineralogical Formulæ, Quantivalent Ratios, etc. Essential and accessory constituents of Rocks. Macroscopic and microscopic characters. Preparation of Rock-sections. Microscopic examination of Minerals and Rocks. Principles of classification. Description and determination of Rocks. (One lecture weekly, with occasional demonstrations in the Museum or Laboratory).

(2) *Canadian Geology.*—Studies of the several Geological formations of Canada with their distribution, subdivisions and characteristic fossils. One lecture weekly, with excursions and Museum demonstrations. (Dana's Manual of Geology. Reports of Geological Survey, Dawson's Acadian Geology.)

(3) *Practical Geology.*—Including methods of observing and recording geological facts and of searching for mineral deposits. *Palæontology*, including studies of special groups of fossils. One lecture or demonstration weekly. (Geikie's Field Geology, Nicholson's Palæontology, special Reports and Memoirs.)

Candidates for Honours will be expected to attain to such proficiency as to be able to undertake original investigations in some at least of the subjects of study.

Students in the Faculty of Applied Science may be candidates for Honours.

LECTURES IN THE UNDERGRADUATE COURSE IN THE FACULTY OF ARTS.

SESSION OF 1886-87.

	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
FIRST YEAR.	9	Classics.	† Mathematics. (*b*)	English.	† Mathematics. (*b*)	Mathematics.
	10	Mathematics.	Classics.	Classics.	Classics.	Classics.
	11	English.	* French.	* French.	* French.	English.
	12	Elementary Chemistry.	* German. * Hebrew.	Mathematics.	* German. * Hebrew.	Elementary Chemistry.
SECOND YEAR.	9	* French.	Logic.	* French.	* German.	* French.
	10	Classics.		Logic.		* German. † Mathematics.
	11	Mathematics.	Classics.	† Mathematics. Botany.	Classics.	Classics.
	12	† Mathematics. Botany.	* German. (*c*)	English.	* German. (*c*)	Logic.
THIRD YEAR.	9	English Literature.	Classics.	† Classics. † Math. Phy.	Classics.	† Classics. † English. (*e*) † Geol.
	10	German. † Math. Physics	French. † Ment. Phil.	† Anglo-Saxon. (*e*)		† Mathematical Physics.
	11	† Mental Philosophy.	Zoology,	Physics [Mathematical].	French. Theoretical Chemistry(*e*)	Rhetoric.
	12	Mental Philosophy. (*e*)	⁋ Physics. [Experimental].	Mental Philosophy. (*e*)	Zoology.	Physics [Mathematical].
	1		Hebrew.	Classics.	⁋ Physics [Experimental]. Hebrew.	German.
FOURTH YEAR.	9	† Math. Physics.	Astronomy. (*a*)	† Classics. Geology.	Astronomy. (*a*)	Classics.
	10	Geology.	French. † M. Philosophy	English Literature. (*e*)	† Mental Philosophy.	Geology.
	11	Classics. † Geology.	German.	Classics.	† English. German.	French. † Geology. Anglo.
	12	† English. Moral Phil.	Moral Philosophy.	† Geology. † M. Phy.	Moral Philosophy.	Saxon and Early English.
	1		⁋ Physics [Experimental].		⁋ Physics [Experimental]. Hebrew.	German. † Math. Phys.

(*a*) During First Term. (*b*) Second Term. (*c*) For beginners entering 2nd Year. † For Candidates for Honours. (*d*) For Medical and Occasional Students.
* The Student may take at his option French or German in the first two years, or, if a Theological Student, Hebrew. ⁋ From Nov. 1st.
Classes at 1 p.m. may be changed to other hours.
(*e*) Additional Department.
Library open every day, 9 to 4. The Museum will be open as arranged by the Professor of Natural History.
Determinative Mineralogy, Wednesday, at 2 p.m. Practical Chemistry, Monday and Thursday, at 2 p.m.

Special Course for Women,

IN THE FACULTY OF ARTS.

DONALDA ENDOWMENT.

The classes for women under this endowment are wholly separate except those for Candidates for Honours, (including most of the additional classes in the Third and Fourth years). The examinations are identical with those for men. Women will have the same privileges with reference to Classing, Honours, Prizes and Medals as men.

In the session 1886-7 there will be classes in the First, Second and Third Years ; in the session of 1887-8 classes will be opened in the Fourth or Final year.

Regulations for Examinations, Exemptions, Boarding Houses, Attendance, Conduct, Library and Museum will be the same as for men, but not the same for Academic Dress.

The *Jane Redpath Exhibition* is open for competition, at entrance into the First Year, to both men and women.

The income of the *Hannah Willard Lyman Memorial Fund* will be given in prizes in the First and Second years.

I. MATRICULATION AND ADMISSION.

In Classics.—Latin.—Cicero, Orations I. and II: against Catiline ; or, Virgil Æneid, Book I. ; Latin Grammar.

Greek.—Xenophon, Anabasis, Book I. ; or, Homer, Iliad, Book I. ; Greek Grammar.

Candidates who cannot pass in Greek may substitute an additional modern language in the course.

In Mathematics.—Arithmetic ; Algebra, to Simple Equations (inclusive) ; Euclid, Elements, Books I., II., III.

In English.—Writing from Dictation. A paper on English Grammar, *including Analysis*. A paper on the leading events of English History.

An equivalent amount of other books or other authors in Latin and Greek than those named may be accepted by the Examiners on application made through the Professor of Classics.

PARTIAL STUDENTS.—Candidates unable to pass in all the above subjects may be admitted as Partial Students, in the separate classes; if prepared to enter in three of the subjects of ordinary course of study they may in the First Year make good their standing as Undergraduates at the Christmas or Sessional Examinations.

OCCASIONAL STUDENTS.—Ladies desirous of taking one or two Courses of Lectures in the separate classes for women, as Occasional Students, may procure from the Secretary of the University tickets for the Lectures they desire to attend.

II. ORDINARY COURSE OF STUDY FOR THE DEGREE OF B.A.

(*In separate classes.*)

First Year.—Classics; French or German; English Grammar and Literature; Pure Mathematics; Elementary Chemistry.

Second Year.—Classics; French or German; English Literature; Elementary Psychology and Logic; Pure Mathematics; Botany.

Third Year.—Latin or Greek; Mathematical Physics (Mechanics and Hydrostatics); with any three of the following departments:—French, German, Experimental Physics, Zoology, English and Rhetoric, Logic and Psychology, Astronomy and Optics, Greek or Latin (if not taken as imperative). The three subjects chosen must be such as the student has been prepared for by studies in the previous years. For exceptions see rule below under Honour Courses.

Fourth Year.—Latin or Greek (same language as in Third Year); Mathematical Physics (as in Third Year), or Astronomy and Optics; Mental and Moral Philosophy; with any three of the following departments:—French, German, Experimental Physics, Geology, History, Astronomy and Optics or Mathematical Physics (if not taken as imperative); Greek or Latin (if not taken as imperative). The three subjects chosen must be such as the student has been prepared for by studies in the previous years. For exceptions see rule below under Honour Courses.

HONOUR COURSES AND ADDITIONAL DEPARTMENTS.

(*In mixed Classes.*)

Undergraduates desirous to take one of the Honour Courses in Classics, Mathematical Physics, Mental and Moral Philosophy,

English Language and Literature, History, Geology and other Natural Sciences, or such portions of these Honour Courses as constitute the "Additional Department" may in the Third and Fourth Years obtain exemptions to the same extent as those given to men, but must take the same lectures with men.

Details will be found in Section XII. of the Calendar.

III. DEGREES.

Students are admissible to the degrees of B.A., M.A., and LL.D.; conferred in the usual way on the usual conditions; and will be entitled to all the privileges of these degrees, except that of being elected as Fellows.

IV. FEES.

Matriculation Fee for the First Year (to be paid in the Year of Entrance only)	$ 4 00
Sessional Fee	20 00
Library Fee (optional)	4 00

Partial Students, viz., those taking three or more Courses of Lectures, are required to pay the Matriculation Fee, and $5 for each Course which they attend, or $20 for all the Courses.

The above Fees are to be paid to the Registrar of the University, from whom Tickets for the Library and copies of the Library Rules may be obtained.

Occasional Students—$5 for each class.

[Associates in Arts, who, at their special Examination, have passed in Latin, Algebra and Geometry, are not required to present themselves for the Matriculation Examination.]

Exemptions from fees may be allowed to the highest pupil of the Girls' High School of Montreal, and of other Schools, on the same terms as men.

V. LODGINGS.

Women not resident in Montreal, proposing to attend the classes, and desiring to have information as to suitable lodgings, are requested to intimate their wishes in this respect to the Registrar of the University at least two weeks before the opening of the session.

It is expected that arrangements may be made with some of the Ladies' Schools in the city to receive students desiring accommodation as boarders.

N.B.—*The Students will have the aid and oversight of a competent Lady Superintendent.*

LECTURES OPEN TO OCCASIONAL STUDENTS, REPORT OF 1886-7.

CHEMISTRY :—
Dr. Harrington.
Tuesday and Thursday, at 12 noon.

BOTANY :—
Prof. Penhallow.
Tuesday and Friday, at 2 p.m.

ZOOLOGY :—
Sir Wm. Dawson,
Tuesday and Thursday, at 4 p.m.

EXPERIMENTAL PHYSICS :—
Dr. Johnson,
Tuesday and Thursday, at 3 p.m.

LOGIC :—
Rev. Dr. Murray and Mr. Lafleur.
Tuesday, Thursday and Friday, at 4 p.m.

METAPHYSICS :—
Rev. Dr. Murray,
Monday and Wednesday, at 4 p.m.

RHETORIC :—
Mr. Lafleur.
Wednesday, at 11 a.m.

ENGLISH :—
Prof. Moyse and Mr. Lafleur.
Language and Literature,
Tuesday, Wednesday and Friday, at 4 p.m.
Literature of Elizabethan and Stuart periods and Shakespeare,
Wednesday and Friday, at 3 p.m.
Chaucer,
Monday, at 11 a.m.

LATIN AND GREEK* :—
Rev. Dr. Cornish,

FRENCH* :—
Prof. Darey.

GERMAN* :—
Prof. Markgraf.

MATHEMATICS AND MATHEMATICAL PHYSICS* :—
Dr. Johnson and Prof. Chandler.

Those Courses in which two lectures weekly are delivered, will each amount to about 40 lectures, and the others in proportion.

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*The Lectures on these subjects extend over the First, Second and Third Years of the Course, and the hours will depend on the standing of Students with respect to previous preparation.

FACULTY OF ARTS.

LECTURES IN THE DONALDA SPECIAL COURSE FOR WOMEN.

YEARS	HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
FIRST YEAR.	12		Chemistry.		Chemistry.	
	2	Mathematics.	French.	Mathematics.	French.	Mathematics.
	3	Latin.	German.	Latin.	Latin.	German.
	4	Greek.	English.	English.	Greek.	English.
SECOND YEAR.	2	Latin.	Botany.	Latin.	Greek. German.	Botany.
	3	Mathematics.	French.	English.	French.	English.
	4	German.	Logic.	Greek.	Logic.	Logic.
THIRD YEAR.	10	French.	Classics.		Classics.	French.
	11	English.		Rhetoric.		German.
	12	Classics.				
	3	German.	Exp. Physics.	Math. Physics.	Exp. Physics.	Math. Physics
	4	Metaphysics.	Zoology.	Metaphysics.	Zoology.	
FOURTH YEAR. 1887–8	9		Moral Phil.			
	10		Astronomy.	Geology.	Astronomy.	
	11	German.	Classics.	Geology.	Classics.	Moral Phil.
	2	French.	Geology.	History.	Geology.	French.
	3		Exp. Physics.	German.	Exp. Physics.	

Faculty of Applied Science.

THE PRINCIPAL (*ex-officio*).

Professors :—GIRDWOOD.	Associate Professors :—DAWSON.
HARRINGTON.	MARKGRAF.
BOVEY.	JOHNSON.
McLEOD.	DAREY.
CHANDLER.	MOYSE.
	PENHALLOW.

Dean of the Faculty :—HENRY T. BOVEY, M.A., C.E.

The Instruction in this Faculty is designed to afford a complete preliminary training, of a technical as well as theoretical nature, to such Students as are preparing to enter any of the various branches of the professions of Engineering and Surveying, or are destined to be engaged in Assaying, Practical Chemistry, and the higher forms of Manufacturing Art.

Four distinct Departments of study are established, viz.:

(1).—Civil Engineering and Surveying, (2).—Mechanical Engineering, (3).—Mining Engineering, (4).—Practical Chemistry.

Each of these extends over four, or, under certain conditions, three years, and is specially adapted to the prospective pursuits of the Student.

The Degrees conferred by the University upon such Undergraduates of this Faculty as shall fulfil the conditions and pass the Examinations hereinafter stated, will be, in the first instance, "Bachelor of Applied Science," mention being made in the Diploma of the particular Department of study pursued; and, subsequently, the degrees of "Master of Engineering" or of "Master of Applied Science." (§V.)

Examination for Land Surveyors: Any graduate in the Faculty of Applied Science, in the Department of Civil Engineering and Land Surveying, may have his term of apprenticeship shortened to one year for the profession of Land Surveyor in Quebec or Ontario, or for the

profession of Dominion Land Surveyor. He must, however, pass the preliminary and final examinations before one of the Boards of Examiners. The former examination should be passed before entering the University, or in the First or Second Year of attendance.

Students in the Civil Engineering Department who at the beginning of their Fourth Year give notice to the Faculty of their intention to prepare for the examination for Dominion Topographical Surveyors will receive preparation for that Examination, more especially in Spherical and Practical Astronomy and Geodesy, and may be exempted from the Heat and Hydraulics, or from the designing of the Fourth Year.

Partial Students may be admitted to the lectures and examinations in the above special work.

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§ I. MATRICULATION AND ADMISSION.

1. Candidates for Matriculation must present themselves for examination on the 16th of September, 1886. They may, however, be admitted at a later period of the Session, upon special application, if qualified to take their places in the classes in progress.

JUNIOR MATRICULATION. For entrance into the First Year, the subjects for examination will be :—

Mathematics.—Arithmetic; Algebra, to end of Simple Equations; Euclid's Elements, Books, I, II, III.

English.—Grammar (including Analysis) and Composition.

Candidates in the School Examinations of the University, who have passed in Geometry, Algebra and English, and have obtained the Certificate of Associate in Arts, will be received as matriculated Students in the First Year.

SENIOR MATRICULATION. For entrance into the Second Year, the subjects for Examination will be :—

Arithmetic.

Algebra.—To the end of Quadratics (as in Colenso's Algebra, Part 1).

Euclid.—Books I., II., III., IV., VI. and XI, and the definitions of Book V.

Plane Trigonometry.—Including solution of Triangles, and the use of Mathematical Tables.

Chemistry.—As in Nichol's Abridgment of Eliot and Storer's Manual.

English.—Grammar (including Analysis), Composition and the leading facts of the History of England.

French or German.—(French Grammar and easy translation. German as in Schmidt's German Guide, Part I., and easy translation.)

Candidates unable to pass in Chemistry, French or German, may be allowed by the Faculty to enter and take the First Year lectures on Chemistry and German.

Candidates who produce certificates of having already completed a portion of a course in some recognized School of Applied Science, may be admitted to an equivalent standing.

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§ II. MEDALS, EXHIBITIONS AND PRIZES.

1. The Lansdowne Silver Medal (the gift of His Excellency The Right Honourable the Marquis of Lansdowne.)

The Lansdowne Medal for session 1886–87 will be open for competition to Fourth Year Students of the Civil Engineering Course. Candidates must take a first-class general standing in their Ordinary Course, and the Medal will be awarded to the Student who stands first in the Advanced Course. §iv. B.)

2. The British Association Gold Medal and Exhibition, founded by the British Association for the Advancement of Science in commemoration of the meeting held in Montreal in the year 1884.

The British Association Gold Medal for session 1886–87 will be open for competition to Fourth Year Students of the Mining Engineering Course. Candidates must take a first-class general standing in the Ordinary Course, and the medal will be awarded to the Student who stands first in the Advanced Course. (§iv. B.)

The British Association Exhibition will be open for competition in September, 1886, to Students entering the Fourth Year; the subjects of Examination being the Theory of Structures, Mathematics, and Mathematical Physics, of the Ordinary Course.

3. The Scott Exhibition of $66 founded by the Caledonian Society of Montreal in commemoration of the Centenary of Sir Walter Scott.

Two Exhibitions on this endowment will be offered for competition at the opening of Session 1886–87, namely :—

One to Students entering the Third Year, the subjects of Examination being :—

(*a*) Macaulay's History of England, Vol. I. ; Cap. I. ; Sir Walter Scott's Lady of the Lake. (*b*). Mathematics. (*c*). Mechanism.

One to Students entering the Second Year, the subjects of Examination being :—

(*a*) Macaulay's History of England, Vol. 1, Cap. 1 ; Shakespeare's Tempest. (*b*) Mathematics.

4. Two Prizes in Books, each of the value of $25, presented by E. B. Greenshields, B.A., and S. Greenshields, B.A., for the two best Summer Reports or Essays.

5. A prize of $15, presented by W. W. Watson, Esq., to the candidate who stands first in the Junior Matriculation Examination.

6. Prizes or certificates of merit are given to such Students as take the highest places in the Sessional and Degree Examinations.

§III. SPECIAL PROVISIONS.

1. Partial Students may be admitted to the professional classes upon payment of special fees (§VII).

2. Undergraduates in Arts may, if allowed by the Faculty of Arts, be admitted to the Professional Classes in Practical Science on payment of the fees for these classes.

3. Students in Applied Science may, by permission of the Faculty, take the Honour Classes in the Faculty of Arts.

4. Students who have passed the intermediate in Arts, and not lower than the Second Class in Mathematics, have the privilege of entering the Second Year in Applied Science, and will be exempted from one of the Departments in the Third and Fourth Years in Arts.

5. Undergraduates in Arts of the Second or Third Years, or Graduates of any University, entering the Faculty of Applied Science may, at the discretion of the Professors, be exempted from such lectures in that Faculty as they may have previously attended as Students in Arts, but must pass all the examinations.

6. Students who fail to obtain their Session, and who, in consequence, repeat the Year, will not be exempted from examination in any of those subjects in which they may have previously passed, except by the express permission of the Faculty. Application for such exemption must be made at the commencement of the Session.

§ IV. COURSES OF STUDY FOR SESSION 1886-87.

A. ORDINARY COURSES.

Civil Engineering.	Mechanical Engineering.	Mining Engineering.	Practical Chemistry.
FIRST YEAR.			
Arithmetic. Euclid.	Arithmetic. Euclid.	Arithmetic. Euclid.	Arithmetic. Euclid.
Algebra. Trigonometry.	Algebra. Trigonometry.	Algebra. Trigonometry.	Algebra. Trigonometry.
Geometrical Conics.	Geometrical Conics.	Geometrical Conics.	Geometrical Conics.
Solid Geometry.	Solid Geometry.	Solid Geometry.	Solid Geometry.
Descriptive Geometry. (Optional.)	Descriptive Geometry (Optional.)	Descriptive Geometry. (Optional.)	Descriptive Geometry. (Optional.)
Freehand Drawing.	Freehand Drawing.	Freehand Drawing.	Freehand Drawing.
Chemistry.	Chemistry.	Chemistry.	Chemistry.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.
SECOND YEAR.			
Mechanism.	Mechanism.	Practical Chemistry.	Practical Chemistry.
Materials.	Materials.	Mechanism.	
Surveying.	Surveying.	Surveying.	
Descriptive Geometry.	Descriptive Geometry.	Descriptive Geometry.	Descriptive Geometry.
Algebra.	Algebra.	Algebra.	
Analytical Geometry.	Analytical Geometry.	Analytical Geometry.	
Calculus	Calculus.	Calculus.	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics.
Experimental Physics.	Experimental Physics.	Experimental Physics.	Experimental Physics.
Zoology.	Mechanical Work.	Zoology.	Botany.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.
THIRD YEAR.			
Theory of Structures.	Theory of Structures.	Theory of Structures.	Practical Chemistry.
Materials.	Materials.	Materials.	Theoretical Chemistry.
Surveying.	Machinery & Millwork	Mining.	
			Blowpipe Analysis.
Descriptive Geometry.	Descriptive Geometry.	Practical Chemistry.	Mineralogy.
Analytical Geometry.	Analytical Geometry.	Blowpipe Analysis.	
Calculus.	Calculus.	Descriptive Geometry.	
Sphl. Trigonometry.		Analytical Geometry.	
Practical Astronomy.		Calculus	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics.
Experimental Physics.	Experimental Physics.	Experimental Physics.	Experimental Physics.
Geology & Mineralogy.	Mechanical Work	Geology & Mineralogy.	Zoology.
Modern Languages.†	Modern Languages.†	Modern Languages.†	Modern Languages.†
FOURTH YEAR.			
Theory of Structures.	Theory of Structures.	Assaying.	Practical Chemistry.
Mathematics.	Mathematics.	Mathematics.	Metallurgy.
	Machinery & Millwork	Metallurgy.	Assaying
	Metallurgy of Iron.	Geology (advanced).	Mineralogy.
Railway Work.		Mineralogy (advanced)	Geology.
Heat & Heat-Engines.	Heat & Heat-Engines.	Heat & Heat-Engines.	
Hydraulics.	Hydraulics.	Hydraulics.	
Graphical Statics.	Graphical Statics.	Graphical Statics.	
Steam Engine.	Steam Engine.	Steam Engine.	
Materials.	Materials.	Materials.	
Designs.	Designs.	Designs.	
Estimates. Spec'ns	Estimates. Spec'ns.	Estimates. Spec'ns.	
Modern Languages.*	Modern Languages.*	Modern Languages.*	Modern Languages.*

(1) During the summer recess the Students in the 2nd, 3rd and 4th years are to employ themselves in some practical work (Mechanical Engineering students in a work-shop), and they are also to prepare a report on such work, to be handed in not later than October 1st. Credit will be given for this Report (or Essay) in the subsequent Sessional Examinations.

(2) Students are not allowed to take subjects which do not form part of their course, without the sanction of the Faculty.

† English or French or German. * Modern languages not imperative in the Fourth Year.

B. ADVANCED COURSES.

1. CIVIL ENGINEERING.—The higher Mathematics and Mathematical Physics and the higher branches of Applied Mechanics, (*Stiffness and Strength of Materials*, *Theory of Structures*, *Heat and Heat Engines*, *Hydraulics*). Students who have passed a creditable Examination in the Mathematical subjects of the Second Year may enter the Advanced Course of the Third Year, and may be exempted from the Modern Languages of that Year.

2. MECHANICAL ENGINEERING.—The higher Mathematics and Mathematical Physics, and the higher branches of Applied Mechanics (*Stiffness and Strength of Materials*, *Dynamics of Machines*, *Heat and Heat Engines*).

3. MINING ENGINEERING.—Study of Ore Deposits (as in Phillips). Theory and Practice of Metal Mining and Ore Dressing. Special work in mineral analysis, with an Essay thereon.

4. CHEMISTRY.—Theoretical Chemistry, Industrial Chemistry, Mineralogy and special laboratory work, with an Essay.

§ V. EXAMINATIONS.

I. FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

1. CHRISTMAS AND SESSIONAL EXAMINATIONS.

There will be a Christmas Examination for Students of the First Year in all the Subjects, and for Students of the Second, Third and Fourth Years in Mathematics, and in those subjects which they take in the Faculty of Arts. A Sessional Examination in all the subjects will be held at the end of the First and Second Years.

2. DEGREE EXAMINATIONS.

(*a*) There will be a Primary Examination at the end of the Third Year in all the subjects of that year. Candidates must pass this Examination before entering the Final Year.

(*b*) There will be a Final Examination for the degree of Bachelor of Applied Science at the end of the Fourth Year in all the subjects of that year.

The General Classification for the Degree Examination will be under two heads, viz. :—

First, those who have satisfied the Examiners in the Advanced Courses, in order of merit.

Secondly, those who have satisfied the Examiners in the Ordinary Courses, in order of merit.

Special Certificates may be given for proficiency in particular subjects.

Certificates may be given to Students who have passed the Special Courses added to the curriculum.

Students who take their Degree in one of the Courses provided by the Faculty of Applied Science may obtain credit in either of the remaining Courses by attending one or more subsequent Sessions, the necessary provision for which will be made.

II. FOR THE DEGREE OF MASTER OF ENGINEERING.

Candidates must be Bachelors of Applied Science of at least three years standing, and must produce satisfactory certificates of having been engaged during that time upon *bonâ fide* work in either the Civil, Mechanical, or Mining Branch of Engineering.

They must pass with credit an Examination extending over the general Theory and Practice of Engineering, in which papers will be set having special reference to that particular branch upon which they have been engaged during the three preceding years.

Candidates must present applications for Examination, together with the necessary certificates and fees. The Faculty will notify the candidates whether their certificates are satisfactory, and also of the date of the Examination.

III. FOR THE DEGREE OF MASTER OF APPLIED SCIENCE.

Candidates must be Bachelors of Applied Science of at least three years standing, must present certificates of having been employed during that time in some branch of scientific work, and must pass with credit an Examination on the Theory and Practice of those branches of scientific work in which they may have been engaged. The other conditions as under the last heading.

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§ VI. ATTENDANCE AND CONDUCT.

The regulations under this head are in all respects the same as those in force for Undergraduates in Arts.

§ VII. LIBRARY AND MUSEUM.

Students in this Faculty have the same privileges with reference to the Library and Museum as Undergraduates in Arts.

§ VIII. FEES.

In the Course of Civil Engineering.—$45 ; Library, $4. In all $49 for each Session.

In the Course of Mechanical Engineering.—$45 ; Library, $4. In all $49 for each Session.

In the Course of Mining Emgineering.—1st Year, $45 ; 2nd, 3rd and 4th Years, $55 ; Library, $4. In all $49 to $59 for each Session.

In the Course of Chemistry.—1st Year, $45 ; 2nd, 3rd and 4th Years, $55 ; Library, $4. In all $49 to $59 for each Session.

Matriculation Fee, for the First and Second Years, $5.

Fee for Degree of Bachelor of Applied Science.—$10.

Fee for Degree of Master of Engineering or Master of Applied Science.—$25.

If for any Special reason the degree of Ma. E. and M. A. Sc. be granted *in absentiâ* the fee will be $40.

The fees must be paid to the Secretary, and the ticket shown to the Dean within a fortnight after the commencement of attendance in each session. In case of default, the student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty on payment of a fine of $1.

The B. A. Sc. fee must be paid before the final Examinations.

Laboratory Students are required to purchase their own chemicals, &c. The larger articles of apparatus will be supplied by the Laboratory, the Students being responsible for breakage.

Partial students may be admitted to the Professional Classes in any year, by payment of the ordinary fees for that year ; or they may attend the lectures on any subject by payment of a fee of $5 for each term,* except in the case of Chemistry, for which a fee of $10 for each term is required.

Graduates in the Faculty of Applied Science may take further courses on payment of half the ordinary tuition fees.

Students taking Blowpipe Analysis, when it does not form part of their course, are required to pay a fee of $5.

Partial Students may attend the course of Instruction in Meteorology on paying a fee of $5.

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* The first term ends with the Christmas examinations, the second with the Sessional.

§ IX. COURSES OF LECTURES.

I. CIVIL ENGINEERING AND APPLIED MECHANICS.

Professor:—HENRY T. BOVEY, M.A., A.M.I.C.E.

Civil Engineering.

The course of instruction in Civil Engineering will include the following:—Mechanism, Earthwork, Masonry, Carpentry, Structures of Timber, Stone and Iron, the Construction of Common Roads, Rail-Roads, Bridges, Viaducts, Tunnels, Canals, River, Harbour and Sea Works, Drainage Works, Lighthouses, Works connected with Irrigation and Water Supply, etc.

Applied Mechanics.

The subject of Applied Mechanics will be treated under two heads:—

(*a*). The Strength of Materials, embracing a study of Work, Inertia, Energy and Entropy, the Strength, Stiffness, and Resilience of Materials, Beams or Girders, Pillars, Shafts, Structures (*simple and complex*), Earthwork, Retaining Walls and Arches.

(*b*). Hydraulics, comprising the Theory of Hydrostatics and Hydrodynamics, the Flow of Liquids through Orifices, Pipes and Canals, the Action of a Stream on inclined or curved Vanes (*fixed or revolving*), Hydraulic Machines (*Pressure Engines, Vertical Water Wheels, Turbines, Centrifugal Pumps*), Pneumatics.

Heat and Heat-Engines.

The course of instruction in this Department will embrace:—The General Description of the Steam Engine, the Theory of Heat, the Application of Heat to Thermal Machines, the Production of Heat and Steam, and also:—

(*a*). The movement and distribution of Steam, including the action of Steam in a Cylinder, the methods and regulation of the distribution of Steam, Systems of Cut-off, the general disposition of Cylinders, Condensers, &c.

(*b*). The modes of transmission and a consideration of certain special machines.

(*c*). The construction of an Engine, under which head will be considered Rivets, Bolts, Screws, Sockets, Keys, Cylinders, Pistons, Organs of Distribution, Organs of Transmission.

(*d*). The construction of Special Machines.

Designs, Estimates, &c.

Engineering Students will also prepare designs, specifications, and estimates of such works as are usually undertaken by the Engineer.

Each Student works independently, under the personal supervision of the Professor of Engineering, and makes such drawings and calculations as would be needed were the structure designed to be actually carried out.

II. MECHANICAL ENGINEERING.

Professors :— { HENRY T. BOVEY, M.A., M.I.M.E.
C. H. MCLEOD, MA.E.

Mechanism.

The lectures on Mechanism will treat of:—The object and structure of a machine, conversion and modification of motion, aggregation of motion, velocity ratios, linkwork, the teeth of wheels and trains of wheels, indicator diagrams and measurement of H. P., escapements, connections, various elementary combinations. Shop visitation by the class.

Theory of Machines.

This Branch will comprise :—

(*a*). *The transmission of Work*, including the measurement of work, the efficiency of machines, dynamical friction, viscosity, and the methods of transmitting work (*by continuous rotation, oscillation, belts, water, and compressed air.*)

(*b*). *The Modification of Work and Stores of Energy*, embracing a study of the actual energy of moving pieces, springs and weights.

(*c*). *Governing and Controlling Machines*, including a consideration of uniform effort, variable resistance, machines driven by fluid pressure, differential governors.

(*d*). *Balancing Machinery.*

Mechanical Work.

A course of lectures will be given on the following specific Departments of Mechanical Engineering, and will treat entirely of the principles and results of actual practice :—The different classes of machinery, Belts, Gearing, Forging, Hammers, the Tempering of Steel, Tools, Vice-work, Fitting and Finishing Lathes and Lathe-works, Planing, Slotting and Shaping Machines, Boring and Drilling, Milling and Milling tools, Screw-cutting, the Slide valve, Standard Measures, Gauging Implements, Riveted Joints, Fastenings, Pipes and Cylinders, Journals, Bearing, Shafting, Linkwork, Pistons and Stuffing Boxes, Lubricators, Moulding and Founding.

Students before obtaining their degree in this course must present certificates of having been employed for at least eight months in Mechanical work-shops.

PRACTICAL CONSTRUCTION.

SECOND, THIRD AND FOURTH YEARS :—During session 1886-87 Mr. P. J. Bolland of the Grand Trunk Railway Mechanical Engineering staff will give a course of lectures at the Grand Trunk Works on :—

Stationary Engines and Boilers (including the detailed construction of a Condensing Engine fitted with Expansion Valve, &c), Shafting, Belting, Spur-Gearing, Cranes (suitable for workshop practice), Steam-Pumps (especially those suitable for boiler-feeding purposes).

III. MINING ENGINEERING.

Professor :—B. J. HARRINGTON, B.A., PH.D.

The object of this course is to give Students a knowledge of the characters and mode of occurrence of various economic minerals, together with the methods employed for their extraction and subsequent treatment.

The lectures on Mining are given during the Third Year, and among the subjects taken up the following may be mentioned :– Blasting and the nature and use of different Explosives, Quarrrying, Hydraulic Mining, Boring, the Sinking, Timbering and Tubbing of Shafts, Driving and Timbering of Levels, Underground Conveyance and Hoisting, Drainage and Pumping, Lighting and Ventilation of Mines, special methods of Exploitation employed in the working of Metalliferous Deposits or of Coal Seams, &c. During this year, also, instruction is given in Blowpipe Analysis, the object of which is to enable Students by means of the blowpipe and a few simple re-agents to detect the nature of different Minerals or Ores. On account of the small quantity of apparatus required, and the rapidity with which accurate results may be arrived at, a knowledge of this subject will be found most useful to those engaged in geological or other field-work.

In the Fourth Year a short course of lectures on Metallurgy is given, and assays are made of various Ores, Fuels, &c.

NOTE.—The lectures on Mining and Metallurgy are illustrated by a series of Models.

IV. DESCRIPTIVE GEOMETRY AND SURVEYING.

Professor :—C. H. MCLEOD, MA.E.

Descriptive Geometry.

SECOND YEAR.—(1).—Linear Drawing. (2).—Orthographic projection, including penetrations, developments, sections, etc.

THIRD YEAR.—(1).—Orthographic projection (continued). Tangent planes and normals. Curved surfaces. Graphical determination of spherical triangles. (2).—Spherical projections, including the construction of maps. (3).—Axometric projection. Isometric projection. (4).—Shades and shadows. (5).—Mathematical perspective. Perspective of shades and shadows.

Surveying.

This course is designed to qualify the student for admission to the practice of Provincial and Dominion Land Surveying. It also affords a practical and theoretical training in field engineering.

SECOND YEAR.—Chain Surveying. Compass Surveying. The use and adjustment of the Transit, Theodolite, Level (Dumpy, Y, and other forms), Sextant, Aneroid Barometer, Plane-table and other field instruments. Contour Surveying. Underground Surveying. Plotting. Practical operations in the field. Calculating areas.

THIRD YEAR.—Topography. Methods of Setting out Work. Curves. Indirect and Barometric Levelling. Hydrographic Surveying. Geodetic Surveying. Practical operations in the field.

NOTE.—The field work is carried out under the personal supervision of the Professor, and is as follows:—(*a*) a chain survey, (*b*) an angular survey, (*c*) a contour survey, (*d*) the location of a line of road, including preliminary surveys, ranging curves, levelling and setting out the work, (*e*) a hydrographic survey. Each student is required to make field notes, and from these to plot all plans and sections required in connection with the above.

At the close of the sessional examinations there is also an optional course for the 3rd year in astronomical observations and triangulations. The former includes latitude, longitude (by lunar culminations), azimuth and time.

FREEHAND DRAWING.

FIRST YEAR.—Instruction in Freehand Drawing is given by Mr. J. H. Bowe. Students in Arts may attend the classes in Freehand Drawing on payment of a fee of $1 per term.

V. CHEMISTRY AND ASSAYING.

(Laboratory of the Faculty of Applied Science.)

Professor :—B. J. HARRINGTON, B.A., PH.D. (Greenshields Professor of Chemistry and Mineralogy.)

Assistant : NEVIL N. EVANS, B.A. SC.

A course of Lectures, illustrated by experiments, is given to all students of the First Year in Applied Science on the Laws of Chemical Combination, Chemical Formulæ and Equations, the preparation and properties of the more important non-metallic and metallic Elements and many of their Compounds, and on the elementary principles of Organic Chemistry. Students taking these lectures must also devote at least three hours a week to practical work in the laboratory.

In the Second and Third Years of the Mining Course instruction will be given in Qualitative and Quantitative Analysis, and Chemistry Students of the latter year will attend a course of lectures on either Theoretical or Organic Chemistry. In the Fourth Year Mining Students will devote themselves chiefly to Mineral Analysis and Assaying, while Practical Chemistry Students may substitute Organic Analysis for these subjects.

VI. PRACTICAL CHEMISTRY.

(Laboratory of the Faculty of Medicine.)

Professor :—GILBERT P. GIRDWOOD, M.D.

Advanced Students may have the privilege of attending the course of Practical Chemistry in the Laboratory of the Medical Faculty under Dr. Girdwood. Details and conditions will be made known on application.

VII. GEOLOGY.

Professor :—Sir J. W. Dawson, LL.D., F.R.S. (Logan Professor of Geology.)
Assistant Professor :—B. J. Harrington, B.A., Ph.D., F.G.S.

Second Year.—A preliminary Course in Zoology, with special reference to Fossil Animals.

Third Year.—Mineralogy, Lithology, Physical and Chronological Geology and Palæontology, Geology of Canada, Methods of Geological Exploration.

Fourth Year.—Special Studies in Mineralogy and Lithology, Advanced Course in General Geology and Palæontology, Geology of Canada, Practical Geology and Field-work.

VIII. BOTANY.

Professor :—D. P. Penhallow, B.Sc.

Course.—General Morphology and Classification. Descriptive Botany. Flora of Canada. Nutrition and reproduction of plants. Elements of Histology.

IX. MATHEMATICS AND MATHEMATICAL PHYSICS.

Professor :—G. H. Chandler, M.A.

The lectures in this course are specially designed to meet the requirements of Students of Applied Science ; those in Mechanics being introductory to Applied Mechanics. The subjects are as follows :—

First Year.—(1) Euclid, six books. (2) Loci, Transversals, &c. (3) Algebra, to Progressions. (4) Plane Trigonometry and the use of Mathematical Tables. (5) Elements of Solid Geometry. (6) Geometrical Conic Sections.

Second Year.—(1) Algebra continued. (2) Analytical Geometry. (3) Differential and Integral Calculus. (4) Mechanics.

Third Year.—(1) Mechanics continued. (2) Spherical Trigonometry. (3) Spherical and Practical Astronomy. (4) Revision and continuation of Analytical Geometry and Calculus, with applications to Mechanics, &c.

X. EXPERIMENTAL PHYSICS.

Professor :—Alexander Johnson, LL.D ; (Peter Redpath Professor of Natural Philosophy.)

Students in this Faculty are required to take the course in Experimental Physics provided by the Faculty of Arts.

The subjects for the Session 1886–87 are Electricity and Magnetism.

XI. ENGLISH LANGUAGE AND LITERATURE.

Professor:—CHARLES E. MOYSE, B.A. (Molson Professor of English Languages and Literature.)

Lecturer.—Paul T. Lafleur, B.A.

FIRST YEAR.—English Language and Literature.

SECOND YEAR.—A special course on English Composition.

THIRD YEAR.—A special course on English Composition.

XII. FRENCH OR GERMAN.

German:—Professor C. F. A. MARKGRAF, M.A.

French:—Professor P. J. DAREY, M.A., B.C.L.

Students of this Faculty are required to take the course in one of these language provided by the Faculty of Arts.

XIII. METEOROLOGY.

Instruction in Meteorological Observations will be given in the Observatory at hours to suit the convenience of Senior Students.

Certificates will be granted to those Students who pass a satisfactory examination on the construction and use of Meteorological Instruments, and on the general facts of Meteorology.

N.B.—Students of the Second, Third and Fourth Years will be required to answer satisfactorily a weekly paper on such subjects of the course as shall be determined by the Faculty.

SPECIAL NOTICE.

The following gentlemen have kindly consented, by request of the Faculty, to deliver lectures on professional subjects of current interest, in the course of the Session 1886–87:—Dr. T. Sterry Hunt, F.R.S.; Messrs. Sandford Fleming, M.I.C.E.; T. C. Keefer, M.I.C.E.; W. Shanly, M.I.C.E.; John Kennedy, M.I.CE. (Chief Engineer Montreal Harbour Works); H. Wallis, M.I.M.E. (Mechanical Superintendent G.T.R.); P. A. Peterson, M.I.C.E. (Chief Engineer, C.P.R.); H. D. Lumsden, M.I.C.E.; A. T. Taylor, M.R.I.B.A.; F. L. Wanklyn, M.I.M.E. (Asst. Mech. Supt. G.T.R.); P. W. St. George (City Surveyor); J. D. Barnett, M.I.M.E. (Asst. Mech. Supt. G.T.R.).

§ X. TEXT-BOOKS.

Civil Engineering and Applied Mechanics :—Bovey, Rankine. * Collignon, *Weisbach, *Van Buren, Reuleaux.

Machinery, etc. :—Goodeve (new edition), *Willis, Rankine, *Knight, Rose *Shelley, *Fairbairn, Unwin.

Heat and Heat Engines :—Maxwell, Tait, *Clausius, Rontgen, Wilson, Rankine, Rigg, Marks.

Moulding and Founding :—Overman.

Materials :—Notes on Building Construction, *Gilmore, Thurston.

Descriptive Geometry :—Millar's Descriptive Geometry.

Surveying :—Gillespie's Land Surveying.

Geology :—Dana's Geology ; Dawson's Handbook of Zoology and Lecture Notes on Geology, *Nicholson's Palæontology, *Geological Survey Reports, *Dawson's Acadian Geology.

Mineralogy :—Dana's Manual. *Dana's Descriptive Mineralogy.

Blowpipe Analysis :—Brush's Determinative Mineralogy and Blowpipe.

Botany :—Gray and Bessey.

Chemistry :—Nichol's Abridgment of Eliot and Storer's Manual of Chemistry, Jones' Junior Course of Practical Chemistry. Fresenius' Manuals of Qualitative and Quantitative Analysis. *Watts' Dictionary of Chemistry. *Roscoe & Schorlemmer's Treatise on Chemistry. *Miller's Elements of Chemistry.

Metallurgy :—Greenwood's Manual of Metallurgy.

Assaying :—Ricketts' Notes on Assaying. Chapman's Assay Notes.

Mathematics :—Todhunter's Euclid, Colenso's Algebra (Part 1), Hamblin Smith's Trigonometry, Wilson's Solid Geometry and Conic Sections, Briggs's Analytic Geometry, Peck's Calculus, Goodeve's Principles of Mechanics, Chambers' Practical Mathematics, Chambers' Mathematical Tables.

English :—Smith's English Composition.

TABLE OF LECTURES.

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
FIRST YEAR.	9			English.	Mathematics.	Mathematics.
	10	Mathematics.	Mathematics.			
	11	English.	French.	French.	French	English.
	12	Chemistry.	German.	Mathematics.	German.	Chemistry.
	2		† Freehand Drawing.			Pract. Chem.
	3		do			Do
						Do

* *Books of Reference.*

† The Freehand Drawing Class is also held from 9 to 11 on Saturdays.

TABLE OF LECTURES—(*Continued*).

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
SECOND YEAR.	9	French.		French. German.	Materials.	{ French. { German.
	10	Surveying.	Botany.†	Surveying.	{ Botany.† { Mathematics.	German.
	11	Mathematics.	Zoology.	Mathematics.	Zoology.	Mathematics.
	12	German.	Exp. Physics.	German.	Exp. Physics.	English.
	2	Prac. Chem. Drawing.	Mechanism.	Prac. Chem. ‡Drawing.	Drawing. Prac. Chem.	Mechanism.
	3	Drawing.	Drawing.	‡ Drawing.	Do	Drawing.
	4	Do			Do	Do
THIRD YEAR	9	Theory of Structures.		Geology. Machinery.	Materials.	German.* Machinery.
	10	Geology. Machinery.	French. German.	Mathematics.	French, German. Theor. Chem.	Geology.
	11	Theory of Structures. (Advanced).	English.	German.	Theory of Structures.	
	12	Mathematics.	Exp. Physics.	German.	Exp. Mech.	Mathematics.
	2	Surveying. Prac. Chem.	Theory of Structures.	{ Blowpipe { Analysis.	Prac. Chem. Surveying.	Theory of Structures.
	3	Drawing.	Drawing.		Drawing.	Drawing.
	4	Mech. Work Drawing.	Drawing. Mining.		Mech. Work. Drawing.	Do
FOURTH YEAR.	9	Theory of Structures.	Designing.	Designing.	Materials.	Designing.
	10	Theory of Structures.	Do	Do	Theory of Structures.	Designing.*
	11	Theory of Struct's.(adv.) Geology.*	Do	Geology.*	Theory of Structures.	Geology.*
	12	Machinery. Mathematics.	Do		Theory of Strct. (Advanced.) Machinery.	Mathematics
	2	Prac. Chem. Assaying. Designing.	Theory of Structures. Prac. Chem.	Prac. Chem.	Prac. Chem. Assaying. Designing.	Theory of Structures.
	3	Do	Hydraulics (*a*) Steam (*a*)		Do	Hydraulics.(*a*) Steam (*a*)
	4	Do	Do	Metallurgy.*	Do	Do

* For Mining and Chemistry Students. (*a*) Steam during first term; Hydraulics during second term.

Field work for Students of the 2nd year on Mondays, Tuesdays, Wednesdays and Thursdays: for Students of the Third Year on Mondays, Wednesdays and Thursdays, during the months of September and October.

† For Pratical Chemistry students. ‡ For Mining Students only.

EXTRACTS FROM THE UNIVERSITY REPORT FOR 1885.

Additions were made in the past summer to the buildings occupied by the Faculties of Arts and Applied Science. These include new Chemical Laboratories, in which the special practical work in Chemistry of the Faculties of Arts and Applied Science will be carried on, along with the assaying and mineralogy connected with the Mining School. These laboratories will, when completed, be capable of accommodating 48 students. The number at present working in them is 34. One of them is being fitted up with the most approved appliances by a member of the Board of Governors.

The University thus possesses in the Chemical Laboratory of the Medical Faculty, and that of the Faculties of Arts and Applied Science, working-room for 120 students, the whole of which is now, or very shortly will be, required.

The Faculty of Applied Science has a valuable collection of engineering instruments and mining and mechanical models.

We are desirous of directing the attention of the friends of the University to another requirement in the direction of building, viz., the provision of suitable rooms for the Faculty of Applied Science. This has hitherto been accommodated in the building of the Faculty of Arts, but not in a manner at all proportionate to its requirements and to its importance as the oldest and most extensive school of Applied Science in Canada. The building required should include not only class-rooms, but commodious and well-lighted drawing-rooms, a model-room and economic museum, and laboratories for exact measurements, testing, electrical work, botanical work, assaying, metallurgy, etc., as well as a workshop with appliances for constructing models, for repairs, &c. The University has the site reserved for such a building, but has not at present means for its erection.

With reference to these requirements, it is to be observed that the University proposes, as heretofore, in accordance with the practice of the best schools abroad, to give a complete scientific and theoretical course in Civil and Mechanical Engineering, Mining and Assaying, and Practical Chemistry. It expects students to engage in practical work in the summer vacations and to make reports thereon;

and it also provides, as far as possible, for practice in its own laboratories and class-rooms in Chemistry, Assaying, Drawing and Designing. It is now desirous to develope its means of training in the art of measurement, and in physical and electrical manipulation, and other practical matters, which may be profitably taken up in connection with the College courses. With a suitable building and one additional chair, it might fairly challenge comparison with any of the schools of Applied Science in America.

It is hoped that these requirements will soon be supplied by the friends of education or those interested in the Industrial progress of the Dominion, which its teaching directly tends to promote.

In addition to the regular lectures, special lectures have been delivered by eminent engineers, whe have been invited by the Faculty to give the students the benefit of their experience in particular branches of the profession.

According to a statement furnished by the Dean of the Faculty five of its graduates are professors in colleges, fourteen are employed in geological surveys, twenty-eight are resident or assistant engineers on railways, six are employed as engineers in public works, two are managers of chemical and mining works, and two are editors of engineering journals. Others are engaged in private practice, as surveyors, architects, mining engineers, etc.

Attending the classes during Session 1885-86 :—

Undergraduates in the courses of Civil, Mechanical and Mining Engineering and practical Chemistry,* 50.

Students in Arts taking Practical Chemistry, 8.

At the close of Session 1884-85 four Students graduated in Civil Engineering and three in Mining Engineering.

BURLAND PRIZE.

A prize of $25.00 is offered by Mr. Jeffrey H. Burland to Students entering the Second Year, the subjects of examination being (*a*) Inorganic Chemistry. (*b*) Elements of Organic Chemistry. (*c*) Practical Chemistry. Further information may be obtained on application to the Registrar.

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* Exclusive of partial Students from other Faculties.

Faculty of Medicine.

THE PRINCIPAL (ex-officio.)

Professors:

WRIGHT,	GIRDWOOD,	BROWNE,
HOWARD,	ROSS,	STEWART,
MCCALLUM,	RODDICK,	WILKINS,
CRAIK,	GARDNER,	PENHALLOW,
FENWICK,	SHEPHERD,	MACDONNELL,
DRAKE,	BULLER,	MILLS.

Dean.—R. P. HOWARD, M. D.
Registrar.—J. STEWART, M.D.

The Fifty-fourth Session of the Faculty will be opened on Friday, October 1st, 1886, by an introductory lecture at 3 p.m. The regular lectures will begin on October 4th, at the hours specified in the time table, and will be continued for six months.

The new building of the Medical Faculty, which was completed during the past Session, is one of the most complete structures of its kind on this continent or elsewhere. It has been found admirably adapted for the fulfilment of the great aim of the Faculty—to make the teaching of the primary branches as practical and as thorough as possible. The facilities now possessed by the Faculty for the above purpose are equal to those of the most advanced European medical schools.

In addition to the laboratories and dissecting room, there are two large lecture rooms, each capable of comfortably seating 300 students, and one small demonstration room for classes of 50 and under. There are two large library rooms and also two rooms for museum purposes. There are provided for students, a cloak-room, waiting and reading-rooms.

The class tickets for the various courses are accepted as qualifying candidates for examination before the Colleges and Licensing

bodies of Great Britain and Ireland, and the College of Physicians and Surgeons of Ontario. The degree in Medicine of this University carries with it at the Licensing Boards of Great Britain the same exemptions in certain subjects as are granted to all colonial degrees.

To meet the circumstances of the General Practitioners in British North America, where there is no division of the profession into Physicians and Surgeons exclusively, the degree awarded upon graduation is that of "Doctor of Medicine and Master of Surgery." in accordance with the general nature and character of the curriculum, as fully specified hereafter. The degree is received by the College of Physicians and Surgeons of the Province of Quebec.

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§ I. MATRICULATION.

It is very important that intending Students should bear in mind the following:—

(1.) That if natives of Ontario, and if they wish to obtain the license of that Province, they must conform to the regulations regarding the Preliminary Examinations, and register before beginning their Medical Studies.

(2.) If natives of the Province of Quebec, they must pass the Matriculation Examination of the Quebec Medical Board before beginning their medical studies.

(3.) Natives of the Maritime Provinces, and of Manitoba, may present themselves before the Local Medical Boards for the Preliminary Examination. Where the Examination and Standard are equivalent to those of the University, a certificate (bearing the standing of the candidate in the various subjects) will be accepted, and the student may register without further examination or fee.

Graduates in Arts are exempt from the Matriculation.

(A).—University Matriculation Examination.

Students have the option of passing either the Arts or Medical Matriculation of this University. The latter is the same as that recommended by the Medical Council of Great Britain. Examinations in conformity therewith will be held the last Friday and Saturday in March, and the last Friday and Saturday in September of each year. Applications may be made to the Registrar of the Faculty till the

evening of the previous day. The requirements of the standard for Matriculation are:—(1) English Language, including Grammar and Composition.* (2) English History. (3) Modern Geography. (4) Latin, including Translation from the original and Grammar. (5) Elements of Mathematics, comprising (*a*) Arithmetic, including Vulgar and Decimal Fractions; (*b*) Algebra, including simple Equations; (*c*) Geometry, including the first two books of Euclid or the subjects thereof. (6) Elementary Mechanics of Solids and Fluids, comprising the elements of Statics, Dynamics and Hydrostatics. (7) One of the following optional subjects:—(*a*) Greek, (*b*) French, (*c*) German, (*d*) Italian, (*e*) any other modern languages, (*f*) Logic, (*g*) Botany, (*h*) Elementary Chemistry.

TEXT-BOOKS.—Latin,—Cicero, Orations 1 and 2 against Cataline; or Virgil, Æneid, Bk. I.

GREEK.—Xenophon, Anabasis, Bk. I., or equivalent.

FRENCH.—Charles XII., Two Books.

NATURAL PHILOSOPHY.—Ganot's Physics.

BOTANY.

ELEMENTARY CHEMISTRY.

(B).—MATRICULATION EXAMINATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF QUEBEC.

Imperative Subjects.

LATIN.—Cæsar's Commentaries, Book V.—Virgil's Æneid, Book V.—The Odes of Horace, Book I.

ENGLISH.—Sprague's "Six Selections from Washington Irving's Sketch Book."—A play of Shakespeare, viz., "The Tempest," for 1885; Richard III., for 1886; and "The Midsummer Night's Dream," for 1886.

FRENCH.—Fénélon's "Aventures de Télémaque."—A French play, viz., Corneille's "Le Cid," 1884; Moliere's "Le Misanthrope," 1886, and Racine's "Esther" for 1887.

BELLES LETTRES.—Principles of the subject. History of the Literature of the age of Pericles in Greece, of Augustus in Rome, of Elizabeth in England, and Louis XIV. in France.

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* The ability of the candidate will be fully tested in the following;—"(1) To write sentences in English on a given theme, attention being given to spelling and punctuation as well as to composition; (2) to write correctly from dictation; (3) to explain the grammatical construction of sentences; (4) to point out the grammatical errors in sentences ungrammatically composed, and to explain their nature; and (5) to give the derivation and definition of English words in common use."

HISTORY.—Outlines of the History of Greece and Rome, with particular knowledge of England, France and Canada.

GEOGRAPHY.—A general view, with particular knowledge of England, France and North America.

ARITHMETIC.—Must include Vulgar and Decimal Fractions, Simple and Compound Proportion, Interest and Percentages, and Square Root.

ALGEBRA.—Must include Fractions and Simultaneous Equations of the First Degree.

GEOMETRY.—Euclid, Books I., II., III., or the portion of Plane Geometry covered by those Books. Also the measurement of the lines, surfaces and volumes, of regular geometrical figures.

Optional Subjects.

GREEK.—Xenophon's Anabasis, Book I.—Homer's Iliad, Book I.

PHYSICS.—Outlines of the subject, as in Ganot's Physics, translated by Atkinson.

PHILOSOPHY.—Elements of Logic and of Moral Philosophy, as in Jevon's Logic and Calderwood's Hand-book of Moral Philosophy.

The Examinations will be held upon the 18th of September, 1886, at Quebec, and on the 7th of May, 1887, at Montreal. Applications to be made to Dr. F. W. Campbell, Montreal, or Dr. Belleau, Quebec, either of whom will furnish schedule giving text books and percentage of marks to be obtained.

Examination Fee, ten dollars. Should the candidate be unsuccessful, one half of the fee will be returned.

Of the four years' study *after* having passed the Matriculation Examination, three six months' sessions, at least, must be attended at a University, College, or Incorporated School of Medicine, recognized by the "Provincial Medical Board." The first session must be attended during the year immediately succeeding the Matriculation Examination, and the final session must be in the 4th year.

(C).—MATRICULATION EXAMINATION

OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF ONTARIO.

Every one desirous of being registered as a Matriculated Medical Student in the Register of this College, except as hereinafter provided, must present to the Registrar the official certificate of having passed the 3rd class non-professional examination with Latin; whereupon he shall be entitled to be so registered upon the payment of twenty dollars and giving proof of his identity.

Graduates in Arts, or Students having matriculated in Arts in any University in Her Majesty's Dominions are not required to pass this Examination, but may register their names with the Registrar of the College, upon giving satisfactory evidence of their qualifications and upon paying the fee of twenty dollars.

§ II. ENREGISTRATION AND PAYMENT OF FEES.

1. All Students desirous of attending the Medical Lectures shall, at the commencement of each Session, enrol their names and residences in the Register of the Medical Faculty, and procure from the Registrar a ticket of Enregistration, for which each Student shall pay a fee of $5 ; excepting in the Clinical Classes, in which Enregistration for Students of other Schools shall not be compulsory.

2. The said Register shall be closed on the last day of October in each year. The fees are payable to, and all class tickets will be issued by, the Registrar, and must be paid in advance (except under special circumstances) at the time of enregistration.

3. Enregistration in the Summer Session is compulsory upon all Students, whether attending one or more of the classes.

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§ III. COURSES OF LECTURES.

ANATOMY.

PROFESSOR FRANCIS J. SHEPHERD.

Anatomy will be taught in the most practical manner possible, and its relation to Medicine and Surgery will be fully dwelt on. The lectures will be illustrated by the fresh subject, moist and dry preparations, sections, models, and plates, and drawings on the blackboard.

PRACTICAL ANATOMY.

Demonstrator ..... RICHARD L. MACDONNELL.

Assistant Demonstrators ..... { WILLIAM R. SUTHERLAND. / R. J. B. HOWARD.

Special attention is devoted to this important branch, the teaching being similar to that of the best European schools. The Dissecting Room is open from 8 a.m. to 10 p.m. ; the Demonstrators' hours are from 10 to 12 a.m. and 8 to 10 p.m. Special Demonstrations on the Brain, Thorax, Abdomen, Bones, &c., are frequently given Every Student must be examined *at least* three times on each part dissected, and if the examinations are satisfactory a certificate is given. Prizes are awarded at the end of the Session for the best examination on the fresh subject. Abundance of material provided.

CHEMISTRY.

PROFESSOR GILBERT P. GIRDWOOD.

Inorganic Chemistry is fully treated ; a large portion of the course is devoted to Organic Chemistry and its relations to Physiology. The branches of Physics bearing upon or connected with Chemistry also engage the attention of the Class. For experimental illustration abundant apparatus is possessed by the College.

The Chemical Laboratory will be open to members of the class to repeat experiments performed during the course, under the superintendence of the Professor or his Assistant.

PRACTICAL CHEMISTRY.

PROFESSOR GILBERT P. GIRDWOOD.

ASSISTANT, R. F. RUTTAN.

The course in Practical Chemistry includes two hours' laboratory work three times a week for three months. The Student is instructed individually in chemical manipulations, blow-pipe analysis, and qualitative determination of the salts, acids, &c., he will require to use in practice. He is required before finishing his course to be familiar with the principles of Practical Forensic, and Sanitary Chemistry. Special attention is directed to instructing the Student in making accurate notes of his experiments and his conclusions. These notes are examined daily and criticised.

PHYSIOLOGY.

PROFESSOR T. W. MILLS.

The purpose of this Course will be to make Students thoroughly acquainted, as far as time permits, with modern Physiology ; its methods, its deductions, and the basis on which the latter rest. Accordingly a full course of lectures will be given, in which both the "Experimental" and Chemical departments of the subject will receive attention.

As during the past two years, in addition to the use of diagrams, plates, models, &c., every department of the subject will be experimentally illustrated. The experiments will be free from elaborate *technique*, and many of them will be of a kind susceptible of ready imitation by the Student.

Laboratory work for Senior Students :—

(1.) During the first part of the Session there will be an optional course on Physiological Chemistry, in which the Student will, under direction, investigate food stuffs, digestive action, blood, and the more important secretions and excretions, including urine. All the apparatus and material for this course will be provided. Fee $6.

(2.) The remainder of the Session will be devoted to the performance of such experiments as are unsuitable for demonstration to a large class in the lecture room, and such as require the use of elaborate methods, apparatus, &c. In selecting those who shall join in this course, preference will be given to Students who take the laboratory work in physiological chemistry, and such as have been most devoted and successful in the pursuit of Physiology during their first year. (There will be no extra fee for this part of the course.)

As far as possible senior Students who do not share in the above courses will be given an opportunity to take some practical part in the physiological work.

HISTOLOGY.

PROFESSOR GEO. WILKINS.

This will consist of a course of ten lectures and twenty-five weekly demonstration with the Microscope. As the demonstrations will be chiefly relied upon for teaching the Microscopic Anatomy of the various structures, the specimens under observation will then be minutely described. Plates and diagrams specially prepared for these lectures will be freely made use of.

Practical Histology.—This is an optional course given by Prof. Wilkins for the purpose, more especially, of teaching Microscopy. It will consist of twenty-five lessons of two hours each. Each Student will be provided with a Microscope and shewn how to use it, and also how to cut, stain and mount specimens for microscopical investigation.

For the purpose of enabling students to observe the different effects of staining, &c., on diseased and healthy structures, a few diseased specimens will be given them to prepare, at the latter part of the course. Students are at liberty to keep all the specimens they prepare. One of the great advantages of this course is that Students will be able to collect a cabinet of 100 or more specimens for reference at any time; these, besides being of great help to them during their College course, they will find especially useful when in active practice for the purpose of comparison with diseased growths. Reagents, and everything except cover-glasses and cabinet cases, provided. Fee $12.

THE MICROSCOPE IN MEDICINE.

DRS. WILKINS AND W. G. JOHNSTON.

This is an optional class for third and fourth year Students, and has been divided into two courses. (1) Pathological Histology, 30 lessons given during the winter, in which special attention will be paid to the microscopical study of pathological anatomy, and methods of preparing specimens. Each student will prepare and mount for himself a cabinet of specimens illustrating all the principal lesions of disease. (2) Clinical Microscopy, 20 lessons in the summer session, affording a

systematic training upon the use of the microscope in the diagnosis of disease, the examination of urine, sputum, blood, pus, tumors and parasites of all kinds. Fee for either course alone $12 ; for both courses $18.

MATERIA MEDICA.

Professor James Stewart.

The course on this subject deals for the most part with the pharmacology and therapeutics of the different medicinal agents. A good deal of attention will be given to the "untoward effects" of drugs, and when possible these effects will be illustrated by the exhibition of living specimens.

The leading officinal agents of the British Pharmacopœia will be fully considered, as will also those drugs of recent introduction into practice which have been found useful, but have not, as yet, found their way into the Pharmacopœia. The following groups of medicinal agents will, on account of their great importance, receive special attention :—1, Cardiac Tonics ; 2, Cardiac Depressants ; 3, Motor Stimulants ; 4, Motor Depressants ; 5, Anæsthetics ; 6, Analgesics; 7, Mydriatics ; 8, Alteratives ; 9, Hæmatinics ; 10, Astringents ; 11, Purgatives ; 12, Digestants ; 13, Nutritives ; 14, Antiseptics ; 15, Antipyretics ; 16, Diuretics.

Electro-therapeutics will also be dealt with.

MEDICINE.

Professor R. Palmer Howard.

While the lectures on this subject are mainly devoted to Special Pathology and Therapeutics, no opportunity is lost of illustrating and explaining the *general* laws of disease. With the exception of certain affections seldom or never observed in this country, all the important internal diseases of the body, except those peculiar to women and children, are discussed, and their Pathological Anatomy illustrated by the large collection of morbid preparations in the University Museum, and by fresh specimens contributed by the Demonstrator of Morbid Anatomy.

The College possesses an extensive series of Anatomical plates illustrative of the Histological and Anatomical appearances of disease, and the wards of the General Hospital afford the lecturer ample opportunities to refer to living examples of very many of the maladies he describes, and to give the results of treatment.

CLINICAL MEDICINE.

Professor George Ross.

Attendance is given in the Medical Wards of the Montreal General Hospital on three days of every week with the 3rd year students, and three days with those of the 4th year. Accurate reports of all cases are kept by duly appointed clinical clerks, and are systematically read before the class. Instruction is given at the bedside,

and special inducements are offered to every pupil to take part in the physical examination of patients. The mode of conducting investigations, the use of the microscope, the value of the thermometer and ophthalmoscope, &c., in medical diagnosis, are all explained and illustrated. Senior Students are called upon in rotation to examine new cases before the class, and to be examined thereon as to their general knowledge. In addition, one weekly Clinical Lecture is delivered, bearing upon some case or cases of importance which may happen to be under observation at the time. Special attention is directed to Medical Anatomy, and candidates for the degree will be examined thereon.

SURGERY.

Professor Geo. E. Fenwick.

The first part of this course consists of Surgical Pathology, illustrated by a large collection of preparations from the College Museum, also specimens as they are obtained from cases under observation at the Hospital, and contributed to that collection by the Hospital pathologist and from private sources. The second part of the course is devoted to the practice of Surgery, in which attention is drawn to cases which have been observed by the class during the previous summer session. The various surgical appliances are exhibited, and their uses and application explained. Surgical Anatomy and Operative Surgery form a special department of this course, and Quain's and Maclise's plates are used in illustration.

CLINICAL SURGERY.

Professor Thomas G. Roddick.

This course is eminently practical, consisting of bedside instruction and lectures delivered weekly, illustrative of surgical cases actually present in the wards of the General Hospital. The class is separated into junior and senior divisions which are taken charge of by the Professor on alternate days, when the reports of the Clinical clerks are read and criticised, and fresh cases are examined by the senior students. The surgical dressings are, as much as possible, reserved for these occasions, so as to give all present an opportunity of participating in the application of splints to fractures, dressing of wounds, minor operations, &c. Major operations are performed in the theatre attached to the Hospital, which is so constructed that the most distant can obtain a fair view of the operations. All the recently invented appliances for the treatment of surgical disease have been introduced into the Hospital.

MIDWIFERY.

Professor A. A. Browne.

This course will embrace : 1. Lectures on the principles and practice of the obstetric art, illustrated by diagrams, fresh and preserved specimens, the artificial pelvis, &c. 2. Bedside instruction in the University Maternity, including the

management and after-treatment of cases. 3. A complete course on obstetric operations with the phantom and preserved fœtuses, in which each final student will perform the various manipulations and operations. 4. The diseases of Infancy.

GYNÆCOLOGY.

Professor Wm. Gardner.

The course on this subject will comprise two lectures a week throughout the session. The anatomy and physiology of the parts concerned will be first discussed. Then the various methods of examination will be fully described, the necessary instruments exhibited, and their uses explained. After this the diseases peculiar to the sex will be considered as fully as time will permit, in the following order:—Disorders of Menstruation; Leucorrhœa, its causes and treatment; Pelvic Cellulitis and Peritonitis; Lacerations of the Cervix Uteri and Perineum; Urinary and Fæcal Fistulæ; Inflammations of the Uterus; Displacements of the Uterus; Tumors of the Uterus; Diseases of the Ovaries.

The lectures will be illustrated as fully as possible by drawings and morbid specimens. The Gynæcological Clinic of the General Hospital furnishes the Professor with ample material to illustrate the subjects considered in the didactic lectures.

MEDICAL JURISPRUDENCE.

Professor George Wilkins.

This course is delivered only during the summer session. It includes Insanity, the subject being treated of in its Medical as well as Medico-legal aspects. Special attention is devoted to the subject of Blood-stains, the Clinical, Microscopic and Spectroscopical tests for which are fully described and shown to the class. The various spectra of blood in its different conditions are shown by Zeiss's Microspectroscope, so well adapted for showing the reactions with exceedingly minute quantities of suspected material. Recent researches in the diagnosis of human from animal blood are alluded to. In addition to the other subjects usually included in a course of this kind, Toxicology is taken up. The modes of action of poisons, general evidence of poisoning and classification of poisons are first treated of, after which the more common poisons are described, with reference to symptoms, post-mortem appearances, and chemical tests. The post-mortem appearances are illustrated by plates, and the tests are shown to the class.

OPTHALMOLOGY AND OTOLOGY.

Professor Frank Buller.

Will include a course of lectures on diseases of the Eye and the Ear, both Didactic and Clinical. In the former the general principles of diagnosis and treatment will be dealt with; in the latter, cases illustrative of the typical forms of ordinary dis-

eases of these organs will be exhibited and explained to the class, and afterwards placed under the special care of gentlemen who may show themselves competent to take charge of them. A course of operations on the cadaver will be open to such students as may wish to avail themselves of the same.

HYGIENE.

PROFESSOR R. L. MACDONNELL.

This course of Lectures will be delivered during the summer session only. It comprises lectures on Drinking-water and Public Water Supplies; conditions of Soil and Water as affecting health, including Drainage and the various methods for the removal of Excreta; the Atmosphere, including Heating and Ventilation; Individual Hygiene, comprising the subjects of Food and Drink; Physical Exercise and Bathing; discussion of the respective merits of the various forms of each, precautions, contra-indications, &c. Village Sanitary Associations: Mutual Protective Sanitary Associations for cities.

BOTANY.

PROFESSOR D. P. PENHALLOW.

The course in Botany includes Histology, General Morphology, Nutrition and Reproduction, and Classification; and is illustrated by specimens, diagrams, models and the microscope.

Students of the first year have access without any additional fee to the lectusre in Zoology, in the Faculty of Arts, and to the Natural History Museum of the University, and the Museum of the Natural History Society of Montreal.

ZOOLOGY.

PROFESSOR SIR WILLIAM DAWSON.

This course includes a systematic study of the classification of animals, illustrated by Canadian examples and by the collections in the Peter Redpath Museum. It forms a suitable preparation for collecting in any department of Canadian Zoology and Palæontology, and an introduction to Comparative Physiology. It may be taken instead of Botany, or along with it, without any additional fee.

Students in Botany or Zoology will receive tickets to the Peter Redpath Museum and to the Museum of the Natural History Society of Montreal.

PATHOLOGY.

W. G. JOHNSTON, *Demonstrator.*

This Course comprises :—

1. Twenty lectures on General Pathology to students of the 3rd year.

2. Pathological Demonstrations weekly—Saturday at 10 a.m. Specimens of all kinds collected during the week, and their gross and microscopic appearances

are demonstrated to the final classes. In addition, special demonstrations in Pathological Histology will be given throughout the session.

3. Instruction in Post-Mortems. The Autopsy Room of the General Hospital is in charge of the Demonstrator. The post-mortems are performed by the students in rotation under his direction, and systematic demonstrations of post-mortem methods, including those to be followed in Medico-legal cases, will also be given.

EXTRACTS FROM THE UNIVERSITY REGULATIONS WITH RESPECT TO THE COURSES OF LECTURES :—

1st. Each Professor shall deliver at least five Lectures during the week, except in Medical Jurisprudence and Botany, if extended through six months, in which case three Lectures a week will suffice.

2nd. Every Lecture shall be of one hour's duration.

3rd. Every Professor shall occasionally examine his class upon the subjects treated of in his preceding Lectures, and every such examination shall be considered as a Lecture.

4th. A roll of the names of the Students attending such class shall be called from time to time.

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§ IV. QUALIFICATIONS FOR THE DEGREE.

The following are Extracts from the Regulations respecting the qualifications of Candidates for the Degree in Medicine :—

1st. No one entering after October 1st, 1884, will be admitted to the Degree of Doctor of Medicine and Master of Surgery, who shall not have attended Lectures for a period of at least four six months' sessions and one three months' summer session* in this University, or some other University, College or School of Medicine, approved of by this University.

2nd. Candidates for Final Examination shall furnish Testimonials of attendance on the following branches of Medical Education, viz. :—

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* To be taken after 3rd Winter Session.

Anatomy.	Of which Two Courses will be required of Six Months' duration.
Physiology.	
Chemistry.	
Materia Medica and Therapeutics.	
Principles and Practice of Surgery.	
Midwifery and Diseases of Women and Children.	
Theory and Practice of Medicine.	
Practical Anatomy.	
Clinical Medicine.	
Clinical Surgery.	
Medical Jurisprudence.	Of which One Course of Six Months, or Two Courses of Three Months will be required.
Practical Chemistry.	Of which One Course will be required of Three Months' duration.
Botany or Zoology.	
Hygiene.	
Histology.	Ten Lectures and Twenty-five Demonstrations.
General Pathology.	Twenty Lectures.

Provided, however, that Testimonials equivalent to, though not precisely the same as those above stated, may be presented and accepted.

3rd. The Candidate must give proof by ticket of having attended during eighteen months the practice of the Montreal General Hospital or that of some other Hospital approved of by this University, and must have compounded medicines for six months.

4th. He must also give proof by ticket of having attended for at least six months the practice of the University or other lying-in Hospital approved of by this University, and of having attended at least six cases of labor.

5th. No one will be permitted to become a Candidate for examination who shall not have attended at least one Session of this University, and one full course of all the branches included in its curriculum.

6th. Courses of less length than the above will only be received for the time over which they have extended.

7th. Every Candidate for the Degree must, on or before the fifteenth of February, present to the Registrar of the Medical Faculty testimonials of his qualifications, entitling him to an examination, and

must at the same time deliver to the Registrar of the Faculty the following Certificate :—

MONTREAL,———18—

I, the undersigned, being desirous of obtaining the Degree of Doctor of Medicine and Master of Surgery, do hereby declare that I have attained the age of twenty-one years, or (if the case be otherwise), that I shall have attained the age of twenty-one years before the next graduation day, and that I am not (or shall not be at that time) under articles as a pupil or apprentice to any Physician, Surgeon, or Apothecary.

(Signed), A.B.

8th. The trials to be undergone by the Candidate shall be such as are referred to under Section V.

9th. The following Oath or affirmation will be exacted from the Candidate before receiving his degree :—

SPONSIO ACADEMICA.

In Facultate Medicinæ Universitatis.

Ego, A——B——, Doctoratus in Arte Medica, titulo jam donandus, sancto coram Deo cordium scrutatore, spondeo ;—me in omnibus grati animi officiis erga hanc Universitatem, ad extremum vitæ halitum, perseveraturum ; tum porro artem medicam caute, caste, et probe exercitaturum ; et quoad in me est, omnia ad ægrotorum corporum salutem conducentia, cum fide procuraturum ; quæ denique inter medendum, visa vel audita silere conveniat, non sine gravi causa vulgaturum Ita præsens mihi spondenti adsit Numen.

10th. The fee for the Degree of Doctor of Medicine and Master of Surgery shall be thirty dollars, to be paid by the successful candidate immediately after examination, together with a Registration fee of one dollar.

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§ V. EXAMINATIONS.

In each class a weekly examination is held to test the progress of the Student ; and in addition two or three written examinations are given throughout the session.

The examinations at the close of each Session are arranged as follows :—

FIRST YEAR.

Pass Examination in HISTOLOGY and BOTANY.

Sessional Examination in ANATOMY, CHEMISTRY, and PHYSIOLOGY.

One hundred marks will be allowed for the Sessional Examination, which marks shall be reckoned in the ranking of the candidate after the examination of the following year.

SECOND YEAR.

Pass Examination in ANATOMY, CHEMISTRY, PRACTICAL CHEMISTRY and PHYSIOLOGY.

Sessional Examination in MATERIA MEDICA and THERAPEUTICS.

One hundred marks will be allowed for the Sessional Examination, which marks shall be reckoned in the ranking of the candidate after the examination of the following year.

THIRD YEAR.

Pass Examination in MATERIA MEDICA and THERAPEUTICS, MEDICAL JURISPRUDENCE, HYGIENE and PATHOLOGY.

FOURTH YEAR.

Pass Examination in MEDICINE, SURGERY, OBSTETRICS, CLINICAL MEDICINE, CLINICAL SURGERY.

By means of the above arrangement a certain definite amount of work must be accomplished in each year, and an equitable division is made between the Primary and Final branches.

With regard to the Primary Examination at the end of the second year, it remains optional with the Student whether he passes in all the branches or leaves two for the third year. In any case, Chemistry and one other must be taken at the close of the second year.

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§ VI. MEDALS AND PRIZES.

1st. The Holmes Gold Medal, awarded to the Student of the graduating class who receives the highest aggregate number of marks for the best examinations, written and oral, in both Primary and Final branches.

The Student who gains the Holmes Medal has the option of exchanging it for a Bronze Medal, and the money equivalent of the Gold Medal.

2nd. A Prize in Books awarded for the best examination, written and oral, in the Final branches. The gold medallist is not permitted to compete for this prize.

3rd. A Prize in Books awarded for the best examination, written and oral, in the Primary branches.

4th. The Sutherland Gold Medal, awarded for the best examination in Theoretical and Practical Chemistry, together with creditable examination in the Primary branches.

5th. A Prize in Books for the best examination in Practical Anatomy.

6th. Prizes in Botany. Viz:—A Prize in Books for the best examination. A Prize of $20 for the best named collection of Canadian plants.*

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§ VII. FEES.

Distributed according to years, the Class Fees are as follows:—

First Year.

Anatomy	$12
Physiology	12
Histology	6
Chemistry	12
Practical Anatomy	12
Botany	5
Dissecting Material	5
Enregistration	5
Total	$69

* This Prize is open to both Medical and Arts Students. The plants entered in competition must be deposited in the Museum Collection.

Second Year.

Anatomy	$12
Practical Anatomy	12
Physiology	12
Chemistry	12
Practical Chemistry	12
Materia Medica	12
Hygiene	6
Dissecting Material	5
Enregistration	5
Total	$88

Third Year.

Medicine	$12
Materia Medica	12
Clinical Medicine	12
Surgery	12
Clinical Surgery	12
Midwifery and Gynæcology	12
Medical Jurisprudence	10
Pathology	10
Enregistration	5
Total	$97

Fourth Year.

Medicine	$12
Surgery	12
Clinical Medicine	12
Clinical Surgery	12
Midwifery and Gynæcology	12
Enregistration	5
Total	$65

Hospital Fees.

Montreal General Hospital, Perpetual Ticket	$20
University Dispensary	Free
University Maternity	8
Total	$28
Graduation Fee	$30
Matriculation Fee, payable only if the Student takes the University Matriculation	5
Total Collegiate and Hospital expenses, spread over four years, about	$375

It is to be understood that a Student wishing to take any other class than that of his year can do so on payment of the class fee.

Fees are payable in advance, to the Registrar, at the time of enregistration.

§VIII. TEXT BOOKS.

ANATOMY.—Gray. Wilson, Quain (Eng. Ed.)
PRACTICAL ANATOMY.—Heath's Dissector, Ellis' Dissector, Holden's Dissector, and Landmarks.
CHEMISTRY.—Fownes, Miller, Roscoe.
PRACTICAL CHEMISTRY.—Odling, Galloway, Fresenius.
PHARMACOLOGY AND THERAPEUTICS.—Wood, Lauder Brunton, Scoresby Jackson, Whitla, and Bruce.
PHYSIOLOGY.—Huxley's *Elementary Lessons*, Yeo, Foster, Dalt.
PATHOLOGY.—Virchow on Post-Mortems, Green.
HISTOLOGY.—Klein's Elements, Essentials of Histology, Schafer.
SURGERY.—Holmes' Surgery (Eng. Ed.) Erichsen, Druitt, Bryant.
PRACTICE OF MEDICINE.—Flint, Roberts, Bristowe, DaCosta, Fagge.
FOR REFERENCE.—Pepper's System of Medicine.
CLINICAL MEDICINE.—Graham Brown's Manual of Diagnosis; Finlayson's Clinical Manual; Flint on Auscultation and Percussion; and Loomis on Physical Diagnosis.
MEDICAL JURISPRUDENCE.—Husband, Guy and Ferrier.
MIDWIFERY.—Lusk, Playfair, or Leishman.
GYNÆCOLOGY.—Edis, Goodell's Lessons, Hart and Barbour's Manual.
HYGIENE.—Parks, Wilson (Eng. Ed.)
BOTANY.—Gray's Text Book of Botany and Vegetable Physiology.
ZOOLOGY.—Dawson's Handbook.

§ IX. MUSEUM.

Most of the usual Pathological Specimens are collected here, obtained from Hospital and private practice. They are largely used in illustrating the lectures on Medicine and Surgery. There are also wax and papier-maché models.

During the past few years numerous and extremely important additions have been made to the Medical Museum.

It is particularly rich in specimens of Aneurisms. In addition to containing a large number of the more common varieties of these formations, there are specimens of such rare conditions as Aneurism of the Hepatic and Superior Mesenteric Arteries, Traumatic Aneu-

rism of the vertebral, together with several of the cerebral and pulmonary arteries. The most important collection probably in existence of hearts affected with "Malignant Endocarditis" is also found. The Faculty are indebted to Prof. Osler, late of this University, for this collection.

Specimens representing morbid alterations of the liver, including Cirrhosis (a beautiful specimen of the Hypertrophic form, weighing 9½ lbs.), Hydatids, Cancer, Abscess, Suppurative Hepatitis following Aneurism of the Hepatic Artery. This section also contains a large number of Biliary Calculi.

Intestines and Peritoneum.—Specimens illustrating the Morbid Anatomy of Typhoid Fever, Tropical Dysentery, Ulceration, and Malignant Diseases.

Urinary Organs.—Besides the various forms of Bright's Disease there are a number of specimens of Surgical and Cystic Kidneys, together with two specimens of Myelo-sarcoma. A fine cabinet of Urinary Calculi, collected by Dr. Fenwick, is also the property of the Museum.

Bones and Joints.—During the past year the Faculty have made very extensive additions to the specimens illustrating diseases of the bones and joints.

Nervous System.—In this section are included a most beautiful collection of Brains prepared by Dr. Osler after the method of Giacomini. Besides those illustrating pathological defect, there are specimens of the brains of horse, cow, dog, cat, pigeon, goose, lion, bear, seal, &c. The Museum also contains a small collection of human abnormalities prepared by Dr. Shepherd during the time he was Demonstrator of Anatomy.

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§ X. LIBRARY.

The Library of the Medical Faculty now comprises upwards of ten thousand volumes, the largest special library connected with any medical school on this continent.

The standard text-books and works of reference, together with complete files of the leading periodicals, are on the shelves. Students may obtain books on making a deposit of $5, which is refunded on returning the volumes.

§ XI. McGILL MEDICAL SOCIETY.

This Society, composed of enregistered Students of the Faculty, meets once a week during the Summer Session, and fortnightly during the Winter, for the reading of papers and the discussion of medical subjects. It is presided over by a physician chosen by the members.

A Reading Room has been established in connection with the Society, in which the leading English and American Medical Journals are on file.

§ XII. HOSPITALS.

Montreal General Hospital.

The Montreal General Hospital is the most extensive clinical field in the Dominion. A much larger number of in-door and out-door patients receive treatment there than in any other Canadian Hospital. Last year's report shows that 2,347 Medical and Surgical cases were treated in the wards, and the great proportion of these were acute cases, as may be gathered from the fact that the average duration of residence was only 23.6 days.

The large number of out-door patients that are treated in the Hospital—averaging from sixty to seventy daily—supply illustrations of most of the diseases of infants and children, of very many of the eye and skin, and of those chronic and ill-defined ailments which, as they do not require admission to the wards of a hospital, would not otherwise come under the observation of the Student.

The large number of patients affected with diseases of the eye and ear now attending the out-door department will afford Students ample opportunity to become familiar with all the ordinary affections of those organs, and to make themselves proficient in the use of the ophthalmoscope, and it is hoped that every student will thus seek to gain a practical knowledge of this important branch of Medicine and Surgery. Operations are performed on the eye by Dr. Buller, after the out-door patients have been seen, and Students are invited to attend the same, and, as far as practicable, to keep such cases under observation so long as they remain in the Hospital.

There are now special departments in the Hospital for Gynæcology and Laryngology, presided over by Specialists in these branches. Students are thus enabled to acquire special technical knowledge

under skilled direction. The difficulty of affording to Senior Students practical instruction in gynæcology is felt in most schools. The plan followed for the past five years, with marked success, has been the limitation of the number of Students to two or three, who, in rotation, assist at the examinations, and receive instruction in the diagnosis and treatment of uterine diseases and the use of gynæcological instruments.

CLINICAL CLERKS in both medical and surgical wards are appointed every three months, and each one during his term of service conducts under the immediate direction of the Clinical Professors, the reporting of all cases in the ward allotted him. The holding of one of these offices is found to be of the greatest possible advantage to Students, as affording a true *practical* training for future professional life. They will be awarded on application at the end of each Session to final Students of that year, in order of their standing in the primary examination.

DRESSERS are also appointed to the Surgical wards and to the Out-door Department. For these appointments application is to be made to the Professor of Clinical Surgery, and to the Out-door attending Physicians and Surgeons.

The Operating Room (used also for a lecture room) is so constructed as to enable the Students to obtain a good view of the operations.

Montreal Dispensary.

St. Antoine Street.

Over 10,000 patients yearly are treated at this institution. The cases are of great variety, comprising a large number of pulmonary affections and children's diseases. Minor operations are of daily occurrence, and excellent practice is afforded in the application of splints and bandages. The attending Physicians furnish Students with all possible facilities. The hours of attendance are from 12 to 2 daily.

University Maternity Hospital.

The Faculty has great pleasure in announcing that the Corporation of the University Maternity contemplates the erection of a large and comfortable maternity building. It will be constructed with all those modern improvements which science and experience have demon-

strated to be of value in this class of buildings. Students will in future therefore have much more abundant opportunities for becoming practically acquainted with Midwifery practice. The Maternity will, as in the past, be under the direction of the Professor of Midwifery, and Students who have already attended one course of his lectures will be furnished with cases in rotation. They are advised to attend this Institution as much as possible during the summer, when, since there are as many patients and not so many pupils as in winter, a larger proportion of cases falls to the share of each.

University Dispensary.

This Dispensary is a pure Polyclinic, being used only for the teaching of special departments of Practical Medicine and Surgery. Instituted a number of years ago, it has been found very successful, fulfiling the aims of the University in giving Students special training in certain branches not elsewhere so ready obtainable. At the present time there are three special Clinics connected with this Dispensary.

Diseases of Children.—The Clinic is on Tuesdays, Thursdays and Saturdays at 1 p.m., when the patients are seen and instruction given on the cases.

Diseases of the Skin.—The Surgeon in charge will attend every Friday at 2 p.m. Arrangements will be made whereby a limited number of students can be present on each occasion.

Diseases of the Nervous System.—The Physician in charge will attend every Monday and Friday at 11 a.m. Students will have an opportunity in this Clinic of seeing and examining many of those obscure and chronic diseases of the brain and spinal cord which are now attracting so much attention in the medical world.

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§ XIII. STUDENTS' APPOINTMENTS.

Resident Medical Officers, Montreal General Hospital, 3 annually, April 10.

Out-door Dressers.

Dressers in Eye and Ear Department.

Surgical Dressers (In-door).

Medical Clinical Clerks.

Post-mortem Clerks.

Clinical Clerk, Gynæcology.
" " Diseases of Children.
" " Dermatology.
" " Diseases of Nervous System.
Obstetrics.
Students' Demonstrators of Anatomy, 4 third-year Students.
Prosectors to Chair of Anatomy, 2.
Assistants in Practical Histology Course, 2.
Assistants in Practical Physiology Course, 4.
Assistants in Practical Chemistry, 2.

§ XIV. CONDUCT AND DISCIPLINE.

1. In the case of disorderly conduct, any Student may, at the discretion of the Professor, be required to leave the Class-room. Persistence in any offence against discipline after admonition by the Professor shall be reported to the Dean of the Faculty. The Dean, may, at his discretion, reprimand the Student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from classes.

2. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

3. While in the College, Students are expected to conduct themselves in the same orderly manner as in the Class-room.

4. When Students are brought before the Faculty under the above rules, the Faculty may reprimand, impose fines, disqualify from competing for prizes and honors, suspend from Classes, or report to the Corporation for expulsion.

COST OF LIVING, &c.

This will, of course, vary with the tastes and habits of the Student. but the necessary expenses need not exceed those in smaller towns, Good board may be obtained from $15 to $20 per month. A list of boarding-houses is prepared annually by the Secretary of the University, and may be procured from the Janitor at the Medical College.

McGill University.—Faculty of Medicine.

TIME TABLE—FIRST AND SECOND YEARS, 1886–87.

A.M.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Anatomy Examination.	Anatomy.	Anatomy.	Anatomy.	Anatomy.	Hygiene, 2nd or 3rd Year.
10	* Practical Chemistry. 2nd Year till 12 o'clock.	Practical Chemistry, II. Botany, 1st Year.	Practical Chemistry. 2nd Year.	Practical Chemistry. Botany, 1st Year.	Practical Chemistry. 2nd Year.	Practical Chemistry. Practical Physiology. Histology Demonstration.
11	Out Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital.
P.M. 2	Physiology Examination.	Physiology.	Physiology.	Physiology.	Histology, 1st Year. Lecture.	
3	Chemistry Examination.	Chemistry.	Chemistry.	Chemistry.	Chemistry.	
4	Therapeutics Examination.	Therapeutics.	Therapeutics.	Therapeutics.	Therapeutics.	Practical Physiology. 2nd Year.
4 to 6		Practical Histology.		Practical Histology.		
A.M. 10 to 12	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.

N.B.—The Demonstrator's Hours in the Dissecting Room are from 10–12 a.m., and from 8–10 p.m. * Until Christmas only.

McGill University.—Faculty of Medicine.

TIME TABLE—THIRD AND FOURTH YEARS, 1886–7.

A.M.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Midwifery.	Gynæcology.	Midwifery.	Gynæcology.	Midwifery.	
10	Surgery. Examination.	Surgery.	Surgery.	Surgery.	Surgery.	Morbid Anatomy. Demonstrations.
11	Practice of Medicine. Examination.	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	
P.M. 1–2.30	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Surgical Clinic, 4th Year. Medical Clinic, 3rd Year.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Surgical Clinic, 4th Year. Medical Clinic, 3rd Year.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Surgical Clinic, 4th Year. Medical Clinic, 3rd Year.
1		Clinic on Diseases of Children.		Clinic on Diseases of Children.		Clinic on Diseases of Children.
2					Skin Clinic.	
2.30			Neurological Clinic.			
2.30	Ophthalmic Clinic.		Ophthalmic Clinic.		Ophthalmic Clinic.	
4	Therapeutics. Examination.	Therapeutics.	Therapeutics.	Therapeutics.	Therapeutics.	
4	Gynæcological Clinic.	General Pathology.	Gynæcological Clinic.	Lecture on Ophthalmology.	Gynæcological Clinic.	

Autopsies are performed at the General Hospital between 12 and 2 p.m.

Faculty of Law.

THE PRINCIPAL (Ex-officio).

Professors :—LAFLAMME.
KERR.
TRENHOLME.
WURTELE.
RAINVILLE.

Professors :—ARCHIBALD.
LAREAU.
HUTCHINSON.
ROBIDOUX.
DAVIDSON.

Lecturer :—HART.

Dean of Faculty.—Professor W. H. KERR, Q.C., D.C.L.

Registrar of the Faculty.—J. S. ARCHIBALD, M.A., B.C.L.

Corporation Examiners for Degrees.—Professors N. W. TRENHOLME, M.A., B.C.L., and EDMOND LAREAU, B.C.L.

Matriculation Examiners of the Faculty.—Professors J. S. ARCHIBALD, M.A., B.C.L., and EDMOND LAREAU, B.C.L.

The Classes in Law will commence on Friday, the first of October, 1886, and will extend to April 9th, 1887.

The Examinations will be held in the William Molson Hall, McGill College Building, from 4 to 6 p.m., on the 15th, 17th, 20th and 22nd December, 1886, and on the 25th, 28th and 31st March, 1887.

The Lecture Rooms of the Faculty are situated in the Molsons Bank Chambers, in St. James street.

The complete course of study in this Faculty extends over three years ; but it may be shortened to two years, when the Student matriculates in the third year of his indentures.

Students who avail themselves of the privilege of attending two years only will nevertheless be required to pass an examination in the subjects comprised in the three years' course.

Matriculated Students who do not take the whole course are classed as Partial Students, and are not entitled to proceed to the Degree of B.C.L.

Occasional Students will be received without matriculation for attendance on any particular series of Lectures.

Students who have completed their course of three years,—or of two years, if they have commenced in the third year of their indentures,—and have passed a satisfactory examination, will be entitled, upon the certificate and recommendation of the Faculty, to the Degree of Bachelor of Civil Law.

COURSE OF STUDY.

FIRST YEAR.

Legal History.... Professor LAREAU.

Civil Law :

Persons, Property, Ownership.... Professor ROBIDOUX.

Roman Law :

Institutes of Justinian, B. I., Gaius, C. I, Maine, Chapters I to IV.... Professor TRENHOLME.

Civil and Commercial Law :

Commercial Agency.... Professor DAVIDSON.

Jurisdiction of Civil Courts, General Rules of Pleading, Code of Procedure from Art. 1st to 135.... Professor HUTCHINSON.

Criminal Law.... Professor ARCHIBALD.

Notarial Course :

Theory and Practice of Notarial Deeds and Proceedings.... Lecturer HART.

SECOND AND THIRD YEARS.

Legal Biography....
Civil Law :
Privileges and Hypothecs, Prescriptions, Imprisonment in Civil Cases.... Professor LAREAU.

Civil Law :

Successions, Gifts and Wills, Substitutions.... Professor ROBIDOUX.

International Law, (Public and Private) ..... } Professor KERR.
Insurance ..... }

Roman Law:

Institutes of Justinian, B. III. from Title 14 ..... }
Maine, Chapters IX. and X ..... }
Civil Law: }
Mandate ..... }
Loan ..... } Professor TRENHOLME.
Deposit ..... }
Pledge ..... }
Evidence ..... }

Commercial Law:

Corporations ..... }
Merchant Shipping ..... }
Affreightment ..... } Professor DAVIDSON.
Insolvency ..... }

Civil Procedure:

First Part, from Article 135 to 544 inclusive ..... Professor HUTCHINSON.

Criminal Procedure and Constitutional Law ..... Professor ARCHIBALD.

Notarial Course:

Theory and Practice of Notarial Deeds and Proceedings ..... } Lecturer HART.

FACULTY REGULATIONS.

1. Any person desirous of becoming a Matriculated Student, shall apply to the Dean of the Faculty for examination and entry in the Register of Matriculation, and shall procure a ticket of Matriculation and tickets of admission to the Lectures for each Session of the Course. Students are requested to call on the Registrar, who will furnish them with the necessary forms.

2. Candidates for Matriculation shall pass an examination, satisfactory to the Faculty of Law, in Latin, French, English, Mathematics, and Ancient and Modern History, and the books upon which such examination shall be had, shall be from time to time fixed by the Faculty.

II. MATRICULATION IN THE FACULTY OF LAW.

The books at present prescribed are the following:

Latin.—Virgil, Æneid, Book I.; Cicero, Orations I. and II. against Catiline; Latin Grammar.

French.—De Fivas' "Grammaire des Grammaires;" *Molière, "Le Bourgeois Gentilhomme;" †Translation into French of Macaulay's Essay on Frederick the Great.

Exercises in composition and grammatical analysis, in English and French.

Mathematics.—Arithmetic ; Algebra to the end of simple equations ; Euclid, Books I., II., III.

History.—White's Outline of Universal History (or any equivalent manual), *Green's Short History of the English People ; Miles' School History of Canada ; †Duruy, Histoire de France.

Literature.—*Collier's Biographical History of English Literature ; †Laharpe, Cours de Litérature ; † Lefranc, Cours de Litérature.

Rhetoric.—Whately's Rhetoric ; Blair's Lectures (small edition).

Philosophy.—*Whately's Logic ; † La Logique de Port Royal ; †Cousin, Histoires de la Philosophie ; *Stewart's Outline of Moral Philosophy.

N.B.—The works mentioned above preceded by an asterisk are for English students only. Those preceded by a cross are for French students only. The remainder are for both English and French.

3. Students in Law shall be known as of the First, Second and Third Years, and shall be so graded by the Faculty. In each year, Students shall take the studies fixed for that year, and those only, unless by special permission of the Faculty.

4. The Register of Matriculation shall be closed on the 1st of November in each year, and return thereof shall be immediately made by the Dean to the Registrar of the University. Candidates applying thereafter may be admitted on a special examination to be determined by the Faculty ; and, if admitted, their names shall be returned in a supplementary list to the Registrar.

5. Persons desirous of entering as Occasional Students shall apply to the Dean of the Faculty for admission as such Students, and shall obtain a ticket, or tickets, for the class or classes they desire to attend.

6. Students who have attended Collegiate courses of study in other Universities for a number of terms or sessions, may be admitted, on the production of certificates, to a like standing in this University, after examination by the Faculty.

7. All Students shall be subject to the following regulations for attendance and conduct :—

(1) A class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted ; and the said class-book shall be submitted to the Faculty at a meeting to be held between the close of the lectures and the commencement of the examinations ; and the Faculty shall, after examination of such class-book, decide which students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

(2) Punctual attendance on all the classes proper to his year is required of each student. Professors will note the attendance immediately on the commencement of their lectures, and will omit the names of Students entering thereafter,

unless satisfactory reasons are assigned. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class-room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the Student or report to the Faculty, as he may decide. While in the building, or going to or from it, students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the Class-rooms, or elsewhere in the building, will admonish the student; and, if necessary, report him to the Dean.

(3) When Students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

(4) Any Student injuring the furniture or building will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

(5) The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

(6) All cases of discipline involving the interests of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice-Principal.

8. The College year shall be divided into two terms, the first extending to the Christmas vacation and the second from the expiration of the Christmas vacation to the 9th of April following.

Four Professors shall deliver their courses of lectures during the first term and three during the second term in each year. Each Professor shall lecture daily during his course and each lecture shall be of one hour's duration; but the Professors shall have the right to substitute an examination for any such lecture.

9. At the end of each term there shall be a general examination of all the classes, under the superintendence of the Professors, and of such other examiners as may be appointed by the Corporation; which examination shall be conducted by means of printed questions, answered by the students in writing in the presence of the Examiners. The result shall be reported as early as possible to the Faculty.

After the examinations at the close of the second term, the Faculty shall decide the general standing of the students, taking into consideration the examinations of both terms, both of which examinations shall be considered the Sessional or Final Examinations for the college year as the case may be.

10. No Student shall be considered as having kept a Session, unless he shall have attended regularly all the courses of Lectures, and shall have passed the Sessional Examinations to the satisfaction of the Faculty in all the classes of his year.

11. The Faculty shall have the power, upon special and sufficient cause shown, to grant a dispensation to any Student from attendance on any particular Course or Courses of Lectures, but no distinction shall, in consequence, be made between the Examinations of such Students and those of the Students regularly attending Lectures. No Student shall pass for the degree of B.C.L. unless he has prepared a Thesis, either in French or English, which shall have been approved by the Faculty.

12. The subject of such Thesis shall be left to the choice of the Student, but it must fall within the range of study of the Faculty, and shall not exceed twenty pages of thirty lines each. Each Student shall, on or before the first day of March, forward such Thesis to the Registrar of the Faculty, marked with the *nom de plume* which he shall adopt, and accompanied with a sealed envelope, bearing the same *nom de plume* on it, and containing inside his name and the subject of his Thesis, and the envelope shall be opened in presence of the Faculty after the final decision shall be given on the respective merits of the several Theses.

13. The Elizabeth Torrance Gold Medal, in the Faculty of Law shall be awarded to the Student who, being of the Graduating Class, having passed the Final Examinations, and having prepared a Thesis of sufficient merit in the estimation of the Faculty to entitle him to compete, shall take the highest marks in a special Examination for the medal, which examination shall include the subject of Roman Law.

14. Every Candidate before receiving the Degree of B.C.L. shall make the following declaration :

Ego A. B. polliceor, me, pro viribus meis, studiosum fore communis hujus Universitatis boni, operamque daturum ut decus ejus ac dignitatem amplificem, et officiis omnibus ad Baccalaureatus in Jure Civili gradum pertinentibus fungar.

15. The fees in this Faculty are as follows :

Matriculation Fee	$ 5 00
Sessional Fee by Ordinary Students	36 00
Sessional Fee by Occasional or Partial Students, for each course	5 00
Graduation Fee, including Diploma and Case	10 00
Additional Fee for Notarial Students	10 00

Matriculation and Sessional Fees must be paid on or before Nov. 1st, and if not so paid the name of the Student shall be removed from the books, but may be re-entered by consent of the Faculty, and on payment of a fine of not less than $3. Students already on the books of the University shall not be required to pay any Matriculation Fee.

16. The Course of Lectures upon the Theory and Practice of Notarial Deeds and Proceedings is optional to candidates for the profession of law, but is compulsory upon candidates for the Notarial profession ; the latter may omit the subject of Civil Procedure.

17. Notarial students shall rank for general standing upon their examination in the notarial class, and failure to pass such examination shall have the same effect as failure in any other compulsory subject.

18. Occasional students may be admitted into said class on such terms as shall be arranged by the Faculty.

19. Every Candidate for the Degree of D.C.L. in course, under Chap. VIII., Section 4, of the Statutes of the University, shall be required to pass within four years from his graduation as B.C.L. such examination as shall be prescribed by the regulations of the Faculty of Law; unless he shall have graduated as a B.A. of this University, either in Course or *ad eundem*. And not less than two months before proceeding to the Degree of D.C.L., the Candidate shall deliver to the Faculty of Law twenty-five printed copies of a Thesis or Treatise upon a subject selected or approved by the Faculty; such Thesis to contain not less than twenty-five octavo pages of printed matter, and possessing such a degree of literary and scientific merit as shall, in the opinion of the Faculty, justify them in recommending him for that Degree. And in addition to the foregoing qualifications, the Candidate shall pay to the Secretary of the Faculty annually during term, for the retention of his name on the Books of the Faculty, during the said period of twelve years, a fee of two dollars, to be added to the Library Fund of the Faculty.

Except as regards the Thesis, this regulation applies only to those who have taken the degree of B.C.L. subsequently to October, 1873. The examination under the above rule is as follows:

(1) *International Law*:—

Phillimore: Wharton, Conflict of Law; Fœlix, Droit International Privé.

(2) *Roman Law*:

Gaii Commentarii, IV.; Pauli Sententiæ; Pomponii Fragmentum de origine juris, D. 1. 2.; Novellæ Justiniani, cxxviii. cxxvii; Ortolan, Institutes de Justinien, Vol. i.; Mommsen's History of Rome.

(3) *Constitutional Law*:—

Hallam, Constitutional History of England; May, Constitutional History of England; Mill, Representative Government; The British North America Act, and cases thereunder.

TABLE OF LECTURES IN THE FACULTY OF LAW.

SESSION OF 1886–7.

	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
FIRST YEAR. First Term.	4.30	Civil Law.	Roman Law.	Civil Law to 6th November. — Thereafter Roman Law.	Roman Law.	Civil Law.
FIRST YEAR. First Term.	5.30	Criminal Law.	Civil Procedure.	Criminal Law to 6th Nov. — Thereafter Civil Procedure.	Civil Procedure.	Criminal Law.
FIRST YEAR. Second Term.	4.30	Legal History.	Commercial Law.	Legal History to 15th Feb. — Thereafter Commercial Law.	Commercial Law.	Legal History.
SECOND AND THIRD YEARS. First Term.	4.30	Roman Law.	Civil Law.	Roman Law to 6th Nov. — Thereafter Civil Law.	Civil Law.	Roman Law.
SECOND AND THIRD YEARS. First Term.	5.30	Civil Procedure.	Criminal Procedure.	Civil Procedure to 6th Nov. — Thereafter Criminal Procedure.	Criminal Procedure.	Civil Procedure.
SECOND AND THIRD YEARS. Second Term.	4.30	International Law.	International Law.	International Law.	International Law.	International Law.
SECOND AND THIRD YEARS. Second Term.	5.30	Commercial Law.	Legal Bibliography.	Commercial Law to 15th Feb. — Thereafter Legal Bibliography.	Legal Bibliography.	Commercial Law.

University School Examinations

1887.

UNDER THE SUPERINTENDENCE OF McGILL UNIVERSITIES, MONTREAL, AND THE UNIVERSITY OF BISHOP'S COLLEGE, LENNOXVILLE.

FOR CERTIFICATES OF THE UNIVERSITY AND THE TITLE OF ASSOCIATE IN ARTS.

These Examinations are held in Montreal and at Lennoxville, and local centres may be appointed elsewhere on application to the Principal of either University, accompanied with satisfactory guarantee for the payment of necessary expenses.

The Examinations are open to Boys or Girls, under 18 years of age, from any Canadian School.

SUBJECTS OF EXAMINATION.

I. PRELIMINARY SUBJECTS.

English Reading	30 *Marks.*
English Dictation	40 do
English Grammar (as in Morell or Smith)	50 do
Arithmetic (all the ordinary rules, including square root)	90 do
Geography (acquaintance with the maps of each of the four continents, and of British North America)	50 do
British History (as in Collier), and *Canadian History* (as in Jeffers's Primer)	50 do

The Candidates will also be examined in the Gospels, unless objection be made thereto by their parents or guardians, and creditable answering in the same will be mentioned in the Certificate.

Additional marks, not exceeding 20, may be allowed in the Dictation paper, for quality of handwriting.

II. OPTIONAL SUBJECTS.

Section 1. Languages.

Latin *:—

Cæsar.—Bell. Gall., Bk. IV., Cap. 20, to V. Cap. 23, incl. Virgil.—Æneid, Bk. I. Cicero.—In Catilinam Orat. I.	150 marks.

* Candidates may if preferred be examined in Cæsar, Bel. Gal. Bk. I., Virgil Æneid, Bk. II., Vs. 1 to 300. Cicero in Catilinam, Orat. 1 and 2; on giving notice on or before May 1.

Greek :—

Homer.—Iliad. Bk. VI.
Xenophon.—Anabasis Bk. I. } 150 do

French :—

Grammar.
Darey's Lectures Francaises.
Re-translation English into French. } 120 do

German :—

Grammar.
Adler's Reader, Section II.
Translation from German into English. } 120 do

Section 2. Mathematics, Natural Philosophy, &c.

Geometry :

Euclid, I., II., III..... 150 do

Algebra :—

Elementary Rules, Involution, Evolution, Fractions, Simple Equations. } 150 do

Plane Trigonometry.

(As in Hamblin Smith, pp. 1-100, omitting Ch. XI 100 do.

Natural Philosophy.

Mechanics and Hydrostatics (as in any ordinary School Text-Book). } 100 do

Geometrical and Freehand Drawing..... 100 do

Geometrical.—Vere Foster R^1 R^2, and R^3 problems 119 to 127. *Freehand*—Rules of Perspective, Drawing from the object.

Section 3. English.

The English Language.

Philology (as in Smith's or Mason's Grammar and Peile's Primer).
Trench's Study of Words. } 120 do

English Literature.

English Literature, Primer by S. A. Brooks.
Shakespeare, Julius Cæsar.
Scott's Lady of the Lake. } 120 do

History.— (As in Primers of Greece and Rome, and Collier's Great Events)..... 100 do

Geography.—Physical, Political and Commercial, as in Calkin's Advanced..... 100 do

Section 4. Natural Science, &c.

Zoology (as in Nicholson's Introductory Text-Book).....	100 do
Botany (as in Gray's "How Plants Grow".....	100 do
Geology (as in Dana's Text-Book).....	100 do
Chemistry (as in Miller's Introduction to Inorganic Chemistry pp. 1 to 198).....	100 do

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GENERAL REGULATIONS.

1. Candidates will not be considered as having passed in any subject unless they have obtained at least *one-third*, (and, in the case of Reading and Dictation, *two-thirds*) of the total number of marks obtainable in that subject.

2. Every Candidate for the Certificate of Associate in Arts, or for the Junior Certificate, must pass in all the Preliminary Subjects.

3. Every Candidate for the Certificate of Associate in Arts must also pass in the Optional Subjects contained in one of the three following groups:

First.—*(a)* Two Subjects of Section 1, one of them being Latin or Greek.
(b) Geometry or Algebra of Section 2.
(c) Two of the eight Subjects of Sections 3 and 4.

Second.—*(a)* French and German of Section 1.
(b) Geometry or Algebra of Section 2.
(c) Two Subjects of Section 3.
(d) One Subject of Section 4.

Third.—*(a)* One Subject of Section 1.
(d) Two Subjects of Section 2.
(c) Three of the eight Subjects of Sections 3 and 4.

4. Candidates for Junior Certificates must pass in the following:
(a) One Subject of Section 1.
(b) One Subject of Section 2.
(c) One of the eight Subjects of Sections 3 and 4.

5. The total number of Marks gained by every Candidate, in both the Preliminary Subjects (except Reading) and Optional Subjects, shall be added up, and the Candidates arranged in a printed list, at the close of the Examination, in the orders of these totals. No marks in any subject shall be counted unless the Candidate has gained at least the minimum number of Marks required for passing in that subject. [The marks in not more than three subjects of section 1, three subjects of section 2, and three subjects selected from sections 3 and 4, will be counted. Candidates taking one classical and one modern language, may, instead of a third language, take an additional subject of section 4, with Geometrical or Freehand

Drawing (150 marks in the aggregate). Candidates who take two modern languages may take an additional subject of section 4, with drawing as above, to be reckoned at 180 marks.]

6. Candidates who obtain at least *two-thirds* of the marks in any Optional Subject will be entitled to a Certificate of creditable answering in that Subject, provided they satisfy the conditions for either Associate in Arts or Junior Certificate.

7. Associates in Arts who have passed in Latin, Greek,* Algebra and Geometry, may, without further examination, enter the Faculties of Arts of the two Universities. Those who have passed in Algebra and Geometry may enter the Faculty of Applied Science of McGill University.

8. Candidates who fail, or who may be prevented by illness from completing their examinations, may come up at the next examination without extra fee, unless in the interval they have become disqualified by age, this disqualification not to apply in cases of illness duly certified by medical authority.

9. The Head Master or Mistress of each school must certify to the character and ages of the pupils sent up for examination.

10. The examinations will begin on Wednesday, June 1st, at 9 a.m.

11. Lists of the names, ages, and Optional Subjects to be taken by the candidates, together with the fee of $4 for each Candidate, must be transmitted to the Secretary of McGill University on or before May 1st. (Blank forms and copies of the Regulations will be furnished on application.)

CLASSICAL SUBJECTS FOR 1888.

Greek :—

Xenophon, Anabasis, Bk. I.; Homer, Iliad, Bk. IV.

Latin :—

Virgil, Aen. Bk. I.; Cæsar, Bell. Gall. Bk. I.; Cicero, in Catilinam, Orat. I.

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* For women entering McGill, Greek will not be required.

Passed the University Examinations.

SESSION 1885-6.

FACULTY OF LAW.

PASSED FOR THE DEGREE OF B.C.L.

Brown, Albert J., B.A.
Elliott, Raleigh J.
Mackie, John F., B.A.
Wright, George C.,.B.A.
Murray, J. Ralph, B.A.
Mackay, Francis S.
Monk, Alfred
Polette, Louis T.
Robillard, Ovide.

FACULTY OF MEDICINE.

PASSED FOR THE DEGREE OF M.D., C.M.

(Arranged Alphabetically.)

Armitage, J. H.
Aylen, P.
Birkett, H. S.
Boggs, G. W.
Campbell, A. W.
Cattanach, W. S.
Clarke, J. L.
Craig, M. A.
Crocket, W. C., B.A.
Decow, D. McG.
Gairdner, T. M.
Gibson, J. B.
Gladman, G. T.
Graham, J.
Grant, J. H. Y.
Groves, W.
Haythorne, T. J., B.A.
Hughes, P. H.
Kennedy, R.A., B.A.
Kinloch, J. A.
Kirkpatrick, R. C., B.A.
Murray, D.
McCollum, E. P.
McCuaig, W. J.
McGannon, T. G.
McKay, J. M.
Orton, T. H.
Osborne, A. B.
Poole, Alf.
Pomeroy, L. E. M., B.A.
Pringle, W. R.
Raymond, Alf.
Raymond, G. H., B.A.
Robertson, F. D., B.A.
Ross, F. L., B.A.
Rowat, W. M.
Schmidt, A. F.
Schmidt, A. J.
Seery, F. J.
Thomas, W. R.
Turnbull, R.
White, F. J.
White, W. W., M.A.
Williams, J. F.
Wilson, C. W.
Worthington, A. N.

PASSED THE PRIMARY EXAMINATION.

(Arranged Alphabetically.)

BOYD, JAY.
BERRY, R. P.
BRADLEY, W. I., B.A.
CAMERON, K.
CHRISTIE, W., B.A.
CLOUSTON, J. R.
CONROY, C. P.
DESMOND, F. J.
DONALD, W. M.
EASTON C. L.
EDGAR, C. J.
FRITZ, H. D., B.A.
GUNNE, N. D.
GRAHAM, J.
HALL, A. G.
HEWITT, J.
HOARE, C. W.
HOPKINS, H. J.
HUBBARD, O. H.
KENNEDY, J. H.
KENNEY, F. L., B.A.
KINCAID, R. M.
KIRKPATRICK, E. A.
LONG, C. M.
MCKINNON, H.
MACDONNELL, A. E. J., B.A.
MCCARTHY, J. G.
MCDONALD, GEO.
MCDONALD, A. D.
MCKAY, H. H.
MCFARLANE, M.
MCLENNAN, D.
MCMARTIN, D. R.
MCDOUGALL, D. S.
MORROW, C.
MURRAY, D.
ORR, A. E.
ORR, J. E.
ORTON, T. H.
PARK, P. C.
POTTS, J. M.
POTHIER, J. C.
PEARMAN, H. V.
ROBERTSON, A. G.
SCHMIDT, A. F.
STEWART, A. D.
SPRINGLE, J. A.
THOMAS, W. R.
THOMPSON, J. H.
WEAGANT, R. A.
WETMORE, F. H.
WILKINS, H. P.
WYLDE, C. F.

FACULTY OF ARTS.

PASSED FOR THE DEGREE OF B.A.

In Honours.

(Alphabetically arranged.)

First Rank.—BRAITHWAITE, EDWARD E.
FYLES, W. M.
MCDOUGALL, JOHN.
PATTERSON, WILLIAM.
PEDLEY, FRANCIS.
RITCHIE, PHILIP E.
SWABEY, CHARLES.
TOPP, FRANCIS.
YATES, NELSON T.

Second Rank.—None.

Ordinary.

(In order of Merit.)

McGill College.

Class I.—Livingstone, Colin H.
Clerk, Ronzo H.
Hibbard, Frederick W.
McOuat, John W.

Class II.—Clements, Benjamin } equal.
Sparling, William }
Dalpé, William H.
McWilliams, Andrew.
Evans, W. Herbert.

Class III.—O'Sullivan, R. Benjamin.
Blair, George A.
Bell, John H
Roberts, W. D.
Chalmers, William W.
McRae, Duncan A.
Holden, Edgar De F.
Wallace, William E.
Hargrave, Isaac L.

BACHELORS OF ARTS PROCEEDING TO THE DEGREE OF M.A. IN COURSE.

White, William J., B.A.
Morin, Joseph L., B.A.

ADMITTED TO THE DEGREE OF LL.D., "*Honoris Causâ.*"

R. P. Howard, M.D., Dean of Faculty of Medicine.
Admiral Sir Erasmus Ommaney, C.B., F.R.S.
Professor P. J. Darey, B.C.L.

PASSED THE INTERMEDIATE EXAMINATION.

McGill College.

Class I.—McLea, Rosalie McD.
Ritchie, Octavia G.
Le Rossignol, James E.
Giles, William James.
Curtis, H. H. } Equal.
Day, John L. }
Campbell, C. A. } Equal.
Cross, Eliza C. }

Class II.—Macallum, Frederick W.
McFee, Donalda.
Bryan, Andrew.
Pedley, Hilton.
Martin, Charles J.
Mason, Horace E. C.
Goff, Henry Neville.
Lindsay, Norman.
Morison, John A.
Simpson, Mary C.
Howitt, William.
Evans, Blanche B.

Class III.—McPhail, T. A.
Pritchard, Thomas.
Duke, William A.
Naismith, Peter L.
Moss, William T. D.
Bryson, Alfred P.
Murray, Alice.
England, George P.
Murphy, Martha.

Morrin College.

Class II.—Donn, John.

FACULTY OF APPLIED SCIENCE.

PASSED THE DEGREE EXAMINATIONS.

Civil Engineering (*Advanced Course.*)
John George Gale Kerry.

Civil Engineering (*Ordinary Course.*)
IN ORDER OF MERIT.

Frederick William Cowie ; George Herbert Dawson; Harmon Trueman ; Bryce J. Saunders.

Mechanical Engineering.
William Murray Reid.

Mining Engineering.
Charles Percy Brown.

Practical Chemistry. (*Advanced Course.*)
Arthur Weir.

Practical Chemistry. (*Ordinary Course.*)
Nevil Norton Evans.

Scholarships and Exhibitions.

SESSION 1885–86.

FACULTY OF ARTS.

I. SCHOLARSHIPS (Tenable for two years).

Year of Award.	Names of Scholars.	Subject of Examination.	Annual Value.	Founder or Donor.
1884	Topp, Francis.	Mathematics.	$125	W. C. McDonald.
1884	Livingstone, C. H.	Natural Science.	125	" "
1884	MacDougall, John.	Class. & Mod. Lang	125	" "
1884	Patterson, William.	" "	125	" "
1885	Johnson, Alex. R.	Mathematics.	125	" "
1885	Johnston, Robert.	Mathematics.	125	Prof. Johnson.
1885	Murray, Alfred P.	Nat. Science.	125	W. C. McDonald.
1885	Patton, Hugh M.	Class. & Mod. Lang	125	W. C. McDonald.
1885	Brown, Samuel R.	Class. & Mod. Lang	120	Chs. Alexander.

II. EXHIBITIONS (Tenable for one year).

NAMES OF EXHIBITIONERS.	Academic Year.	Annual Value.	Founder or Donor.
LeRosignol, Jas. E.	Second	$125	W. C. McDonald.
Day, John L.	"	125	George Hague.
Bryan, Andrew.	"	100	Major H. Mills.
Gibson, Wm. Donald	First	125	W. C. McDonald.
Deeks, Wm. E.	"	125	W. C. McDonald.
Grant, David.	"	100	Mrs. Jane Redpath.

ANNE MOLSON MATHEMATICAL PRIZE.

This Prize (valued about $64) was awarded to Topp, F. (Fourth Year).

Prizes, Honors and Standing.

SESSION 1885–6.

FACULTY OF LAW.

GRADUATING CLASS.

First Rank Honours and Elizabeth Torrance Gold Medal and Prize in International Law—ALBERT JOSEPH BROWN, B.A.

First Rank Honours and Prize for General Proficiency.—RALEIGH J. ELLIOT.

First Rank Honours and Prize in International Law.—JOHN F. MACKIE, B.A.

Second Rank Honours.—GEORGE C. WRIGHT, B.A.

Standing in the Several Classes.

INTERNATIONAL LAW.—
First, MACKIE.
Second, ELLIOT.

ROMAN LAW.—
First, BROWN.
Second, MURRAY.

CRIMINAL LAW.—
First, BROWN.
Second, ELLIOT.

LEGAL HISTORY.—
First, BROWN.
Second, ELLIOT.

CIVIL PROCEDURE.—
First ELLIOT & MACKIE, equal.
Second, BROWN.

CIVIL LAW.—
First, BROWN.
Second, ELLIOT.

COMMERCIAL LAW.—
First, BROWN.
Second, ELLIOT

SECOND YEAR.

First Prize for General Proficiency.—HENRI A. BEAUREGARD.
Second Prize.—WM. H. BURROUGHS.

Passed the Sessional Examinations

Henri A. Beauregard, William H. Burroughs, Hector Buie.

Standing in the Several Classes.

INTERNATIONAL LAW.—
First, BEAUREGARD.
Second, BURROUGHS.

ROMAN LAW.—
First, BEAUREGARD.
Second, BURROUGHS & BUIE, equal.

CRIMINAL LAW.—
First, BUIE.
Second, BEAUREGARD.

LEGAL HISTORY.—
First, BUIE.
Second, BEAUREGARD

CIVIL PROCEDURE.—
First, BURROUGHS.
Second, BEAUREGAND.

CIVIL LAW.—
First BEAUREGARD.
Second, BURROUGHS.

COMMERCIAL LAW.—
First, BURROUGHS.
Second, BUIE.

FIRST YEAR.

First Rank Honours and Prize for General Proficiency.—JOHN FERGUSON.
First Rank Honours and Secona Prize.—ROBERT A. DUNTON.
First Rank Honours.—HENRY FRY.

Passed the Sessional Examinations.

John Ferguson, Robert A. Dunton, Henry Fry, John F. Reddy, Archibald W. Craigie, Hanbury A. Budden.

Standing in the Several Classes.

ROMAN LAW.—

First, FERGUSON.
Second, DUNTON.

CRIMINAL LAW.—

First, FERGUSON.
Second, FRY.

LEGAL HISTORY.—

First, FERGUSON.
Second, REDDY.

CIVIL PROCEDURE.—

First, FERGUSON & DUNTON, equal.
Second, BUDDEN.

CIVIL LAW.—

First, FERGUSON.
Second, CRAIGIE.

COMMERCIAL LAW.—

First, FERGUSON.
Second, DUNTON.

FACULTY OF MEDICINE.

THE HOLMES GOLD MEDAL.—HERBERT S. BIRKETT, Hamilton, Ontario.

Prize for the best Final Examination.—WALTER W. WHITE, B.A., St. John, N.B.

Prize for the best Primary Examination and Sutherland Gold Medal for Chemistry.—WILLIAM I. BRADLEY, B.A., Ottawa.

Deserving Honourable Mention.

In the Primary Examination—H. D. Fritz, B.A., N. D. Gunne, F. L. Kenney, B.A., J. R. Clouston, D. McLennan, R. M. Kincaid, A. D. McDonald, A. D. Stewart, B.A., A. E. Orr, O. H. Hubbard, A. E. Kirkpatrick, J. E. Orr, P. C. Park, and J. H. Kennedy.

Final Examination.—R. A. Kennedy, B.A., E. P. McCollum, F. D. Robertson, B.A., R. C. Kirkpatrick, B.A., T. J. Haythorne, B.A., W. C. Crockett, B.A., A. W. Campbell, J. B. Gibson, J. A. Kinloch, W. M. Rowatt, F. J. Seery, C. W. Wilson, Alf. Raymond, P. H. Hughes, J. F. Williams, J. R. Pringle, W. J. McCuaig, J. H. Y. Grant, T. M. Gairdner, A. N. Worthington.

PROFESSOR'S PRIZES.

BOTANY.—G. G. Campbell.

PRACTICAL ANATOMY.—Demonstrator's Prizes: 2nd Year, H. D. Fritz. 1st year, H. Slater.

CLINICAL MEDICINE.—Junior Class, E. H. P. Blackader.

OBSTETRICS.—H. S. Birkett, Hamilton, Ont.

The detailed lists of standing in the several Classes will be found in the Special Announcement of the Faculty.

FACULTY OF ARTS.

GRADUATING CLASS.

B.A. Honours in Mathematics and Natural Philosophy.

TOPP, FRANCIS.—First Rank Honours and Anne Molson Gold Medal.

B.A. Honours in Classics.

FYLES, WILLIAM S.—First Rank Honours and Chapman Gold Medal.

PATTERSON, WILLIAM.—First Rank Honours.

B.A. Honours in Natural Science.

SWABEY, CHARLES.—First Rank Honours and Logan Gold Medal.

B.A. Honours in Mental and Moral Philosophy.

MCDOUGALL, JOHN.—First Rank Honours and Prince of Wales Gold Medal.

BRAITHWAITE, E. E.—First Rank Honours.

YATES, N. P.—First Rank Honours.

PEDLEY, F.—First Rank Honours.

B.A. Honours in Modern Languages.

RITCHIE PHILIP E.—First Rank Honours and Lansdowne Gold Medal.

Special Certificates.

LIVINGSTONE, COLIN H.—Hiram Mills Gold Medal.

CLERK, RONZO H.

HIBBARD, FREDERICK W.

MCOUAT, JOHN W.

Neil Stewart Prize in Hebrew.

GRANT, A. S., B. A.

THIRD YEAR.

JOHNSON, ALEXANDER R., First Rank Honours and Prize in Mathematics and Mathematical Physics, First Rank General Standing, Prize in Classics.

WALSH, JAMES, First Rank Honours and Prize in Natural Science, First Rank General Standing.

MURRAY, ALFRED P., First Rank Honours in Natural Science, First Rank General Standing, Prize in Zoology.

NICHOLSON, JOHN A., First Rank Honours in English Language and Literature, First Rank General Standing.

ROCHESTER, WILLIAM N., First Rank Honours and Prize in Classics.

CLAY, W. LESLIE. First Rank Honours and Prize in Mental Philosophy.

COLBY, CHARLES W., First Rank Honours in English Language and Literature and Prize in Rhetoric and Chaucer.

PATTON, HUGH M., First Rank Honours in Modern Languages.

CAMERON, WELLINGTON A., First Rank Honours in Mental and Moral Philosophy.

NICHOLS, WILLIAM A., Second Rank Honours in English Language and Literature.

LANGTON, J. F., Second Rank Honours in Mental Philosophy.

WHYTE, CHAS. W., Second Rank Honours in Mental Philosophy.

BROWN, S. R. First Rank General Standing, Prize in Mental Philosophy.

JOHNSTONE, ROBERT.—First Rank General Standing.

MCLENNAN, M., Prize in Hebrew.

PASSED THE SESSIONAL EXAMINATION IN THE THIRD YEAR.

Walsh, Johnson (A. R.), Murray, Brown, Nicholson, Johnstone (R.) ; Clay and McLennan and Rochester, equal; McArthur, Colby, Kingston, Solandt; Patton and Sanders, equal ; Larkin, Nichols, Cameron, Langton ; Russell and Whyte, equal ; Gerrie, Henderson R. B.

Naismith, *æger.*

SECOND YEAR.

GOFF, HENRY NEVILLE.—(High School, Port Perry, Ont.).—Second Rank Honours and Prize in Mathematics.

LE ROSSIGNOL, JAMES E.—First Rank General Standing.

GILES, WM. JAMES.—First Rank General Standing.

CURTIS, H. H.—(McGill Normal School).—Prize in French, Prize in Logic.

MACALLUM, FREDK. K. W.—(Oberlin College, Prepy. Department).—Prize in Hebrew.

MARTIN, CHARLES J.—(High School, Montreal.)—First Prize in English.

HOWITT, WILLIAM.—(Private Tuition.)—Prize in Botany.

BRYAN, ANDREW.—(St. Francis College, Richmond, Q.)—Second Prize in English.

PASSED THE SESSIONAL EXAMINATION.

Le Rossignol, Giles ; Curtis and Day, equal ; Campbell, Macallum, Bryan, Pedley, (H.), Martin, Mason, Goff, Lindsay, Morison, Howitt, McPhail, Pritchard, Duke, Naismith, Moss, Bryson, England.

FIRST YEAR.

DEEKS, WILLIAM E.—(Morrisburg High School, Ont.)—Second Rank Honours and Prize in Mathematics, Prize in Greek and Roman History, Prize in Hebrew.

GIBSON, W. D.—(Morrisburg High School, Ont.)—Prize in Classics, Prize in Chemistry, Prize in German.

ROGERS, WM.—(Huntingdon Academy, P.Q.)—Prize in French.

MEIGHEN, F. S.—(High School, Montreal.)—Prize in German.

PASSED THE SESSIONAL EXAMINATION.

Gibson, Deeks, Rogers, Swanson, Meighen, Robertson, Smith, Walsh, Parker, MacKenzie, Shepherd, Holden, Lucas, Moore.

At the Examinations in September, 1885, the following *Scholarships* and *Exhibitions* were awarded:—

SCHOLARSHIPS—TENABLE FOR TWO YEARS.

THIRD YEAR.—*Mathematical Scholarships*, *Johnson, A.R., § Johnstone, R.

THIRD YEAR.—*Classical and Modern Language Scholarships*, *Patton, H. M., ¶Brown, S. R.

THIRD YEAR.—*Natural Science Scholarship*, *Murray, Alfred P.

EXHIBITIONS—TENABLE FOR ONE YEAR.

SECOND YEAR.—*Le Rossignol, J. E. (High School Montreal); †Day, John L. (High School, Montreal); ‡‡Bryan, A. P. (St. Francis College, Richmond).

FIRST YEAR.—*Gibson, Wm. D., (Morrisburg High School, Ont.); *Deeks, Wm. E. (Morrisburg High School, Ont.); ‡Grant, D. (High School, Montreal).

ANNE MOLSON MATHEMATICAL PRIZE.

At a special examination in September, 1885, this prize was awarded to:—
Topp, Francis, Student of the Fourth Year.

NEW SHAKSPERE SOCIETY'S PRIZE.

At a special examination in January, 1886, this prize was awarded to:—
Topp, Francis, Student of the Fourth Year.

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*Value of Scholarship or Exhibition, $125 yearly; founder, W. C. MacDonald, Esq.
¶Value, $120 yearly; founder, Charles Alexander, Esq.
†Value, $125 yearly; donor, George Hague, Esq.
‡Value, $100 yearly; founder, Mrs. Jane Redpath.
§Value, $125 yearly; donor, Dr. Johnson.
‡‡Value, $100 yearly; founder, Major H. Mills.

SESSIONAL EXAMINATIONS, 1886.

The mark in the following list indicates Partial or Occasional Students.*

ORDINARY COURSE IN ARTS.

GREEK.

B. A. ORDINARY.—*Class I.*—Fyles, Patterson. *Class II.*—Sparling, Livingstone. *Class III.*—Yates; Braithwaite and McWilliams, equal; McRae and O'Sullivan, equal; Roberts.

THIRD YEAR.—*Class I.*—Johnson (*Prize*) and Rochester (*Prize*), equal; Brown and Walsh, equal; Clay, McArthur, Johnstone. *Class II.*—McLennan; Henderson and Russell, equal. *Class III.*—Bourne and Langton, equal; Sanders, Gerrie, Solandt, Internoscia.

SECOND YEAR.—*Class I.*—McLea, Day. *Class II.*—Duke, Giles, Simpson; Bryan and Howitt and Macallum, equal; Martin, Lindsay, Campbell. *Class III.*—Curtis, Le Rossignol, McPhail, Morison; Bryson and Moss, equal; Pedley, Mason, Goff; England and Pritchard, equal; Naismith, Evans.

FIRST YEAR.—*Class I.*—Gibson (*Prize*). *Class II.*—Rogers, Deeks, Swanson; Henderson and Stevenson, equal. *Class III.*—Parker, Walsh, Grant, Meighen; Mackenzie and White and *Robertson, equal; Warden, *Bell, Smith, *Garth; Moore and Shepherd, equal; Watt; Buchanan and Evans and *Scott, equal.

LATIN.

B. A. ORDINARY.—*Class I.*—Fyles and Swabey, equal; Clerk and Livingstone, equal; McOuat and Patterson, equal; Hibbard. *Class II.*—O'Sullivan, McRae. *Class III.*—Bell and Clements, equal; Evans, Holden; Chalmers and Dalpé, equal.

THIRD YEAR.—*Class I.*—Johnson, Rochester; Colby and Johnstone and McArthur, equal; Brown and Larkin, equal. *Class II.*—Kingston, Nichols, Murray. *Class III.*—None.

SECOND YEAR.—*Class I.*—McLea, Ritchie, Day. *Class II.*—Giles and McFee and Simpson, equal; Bryan; Duke and Howitt and Lindsay and McPhail and Morison, equal; Le Rossignol and Macallum, equal; Mason, Martin, Cross, Campbell. *Class III.*—Curtis, Moss, Bryson, Evans, Murray; Pedley and Pritchard, equal; Goff; Palmer and *Murphy, equal; Thurlow, Naismith.

SECOND YEAR—(*Latin Prose Composition.*)—*Class I.*—Bryan. *Class II.*—McLea; Duke and Macallum and Day and McPhail, equal. *Class III.*—Simpson, Pritchard; Campbell and Curtis and Evans and Martin, equal; Mason and Pedley, equal; Howitt and Ritchie, equal; Le Rossignol, Giles, Bryson; Goff and Morison, equal; Jamieson and Lindsay, equal; Hall; Cross and McFee and Moss and Sweeny, equal.

FIRST YEAR.—*Class I.*—Gibson (*Prize*); Swanson, Rogers. *Class II.*—Henderson, Stevenson, Deeks. *Class III.*—Meighen; Mackenzie and Walsh and *Robertson, equal; Grant, Parker, Shepherd; Warden; Evans and Smith, equal; Moore; Buchanan and *Bell, equal.

GREEK AND ROMAN HISTORY.

FIRST YEAR.—*Class I.*—Deeks (*Prize*); Meighen, Stevenson, Grant. *Class II.*—Gibson and White and *Robertson, equal; Mackenzie and Rogers, equal. *Class III.*—Walsh and Evans, equal; Shepherd, *Scott, Parker; Buchanan and Smith, equal; Henderson, Swanson; *Garth and *Holden and Lucas, equal.

MENTAL AND MORAL PHILOSOPHY.

B.A. ORDINARY.—(*Moral Philosophy*).—*Class I.*—Clerk, Livingstone, Braithwaite McOuat and Yates, equal; Pedley; McDougall and Sparling, equal; Hibbard, Clements. *Class II.*—O'Sullivan; Dalpé and Roberts, equal; Evans and McWilliams, equal; Blair.—*Class III.*—Wallace; Chalmers and Holden, equal; Bell, Hargrave.

B.A.—(*Additional Department in Mental and Moral Philosophy*).—*Class I.*—McDougall, Yates, Pedley (F), Braithwaite, McWilliams, Sparling. *Class II.*—Wallace.—*Class III.*—Roberts.

THIRD YEAR.—(*Additional Department in Mental Philosophy*) *Class I.*—Brown; Clay, Cameron, Naismith (J.) Henderson (R. B.)—*Class II.*—McKenzie, Whyte, Mounteer, Johnston. *Class III.*—Gerrie, Langton, Russell, Harrison.—*Prizes.*—Brown & Clay.

SECOND YEAR.—(*Logic*).—*Class I.*—McLea, Le Rossignol; Curtis and McFee, equal; Mason, Goff, Macallum, Campbell; Evans (B) and Howitt, equal; Blackader and Lindsay and Ritchie, equal: Martin, Giles, Pritchard, Cross. *Class II.*—Pedley (H), Bryan; Day and Simpson, equal; Palmer Moss; Morrison and Thurlow, equal; Murray (A) —*Class III.*—Murphy; McPhail and Naismith (P. L.) equal; England, Bryson, Hall, Jamieson; Duke and Massé and Sweeney, equal; Harris (W.) Meek.—*Prizes.*—McLea and Curtis.

RHETORIC AND ENGLISH LITERATURE.

THIRD YEAR.—*Class I.*—Colby, Nicholson, Murray, Henderson; Brown and Clay, equal; Nichols, Cameron. *Class II.*—Johnston and Langton, equal; Kingston, Sanders; Bourne and White, equal; Larkin and Rochester, equal. *Class III.*—McLeod (M. J.); McKenzie and Naismith, equal; Gerrie, Russell, Internoscia. *Prize.*—Colby.

Third Year Additional Department in English and History.—Class I.—Colby, Nicholson. *Class II.*—Nichols. *Class III.*—Larkin.

MODERN HISTORY.

B.A. ORDINARY.—*Class I.*—Livingstone, Dalpé. *Class II.*—Hibbard, Ritchie, Clements, Blair, McOuat. *Class III.*—Wallace; Pedley and Hargrave, equal; Fyles and O'Sullivan, equal.

B.A. Additional Department in English and History.—Class I.—None. *Class II.*—Dalpé, Hargrave.

ENGLISH LITERATURE AND HISTORY.

SECOND YEAR.—*Class I.*—Martin, Bryan, McLea, Blackader, Ritchie, Moss, Le Rossignol, Simpson, McPhail, McFee. *Class II.*—Campbell, Curtis; Macallum and Pedley, equal; Giles and Mason and Morison and Murray, equal; Cross, Bryson. *Class III.*—Howitt, Day; Naismith, and Evans, equal; Duke; Massé and Pritchard, equal; Goff, England, Murphy.

First Prize.—Martin. *Second Prize.*—Bryan.

ENGLISH LITERATURE AND ANALYSIS.

FIRST YEAR.—*Class I.*—Stevenson, Deeks. *Class II.*—Parker; *McGregor and Rogers, equal; Gibson and *Robertson, equal; Meighen, McKenzie, *Garth Swanson. *Class III.*—*Holden, Grant, Walsh, *McCaskill, *Scott, Smith, White, Buchanan, Henderson, Warden, Lucas, Moore, Watt, Shepherd.

Prize.—Stevenson.

Third year Honour Examinations in English.

COLBY, CHAS. C.—First Rank Honours and Prize in English Language and Literature.

NICHOLSON, J. A.—First Rank Honours and Prize in English Language and Literature.

NICHOLS, W. A.—Second Rank Honours in English Language and Literature.

MECHANICS AND HYDROSTATICS.

B. A. ORDINARY.—*Class I.*—Topp; Clerk and Livingstone, equal; Hibbard and Ritchie, equal. *Class II.*—None. *Class III.*—Evans and Wallace, equal; Holden, McRae, Blair, Clements.

THIRD YEAR.—*Class I.*—Walsh; Johnson (A. R.) and Nicholson, equal; Brown. *Class II.*—McArthur, Naismith. *Class III.*—McLennan (M.); Johnstone (R.), and Kingston, equal; Henderson, Nichols and Whyte, equal; Patton Cameron.

ASTRONOMY AND OPTICS.

B.A. ORDINDARY.—*Class I.*—Topp, Livingstone, Hibbard. *Class II.*—McOuat. *Class III.*– Sparling, Dalpé.

THIRD YEAR.—*Class I.*—Johnstone (R.), Johnson (A. R.) *Class II.*—None. *Class III.*—None.

TRIGONOMETRY AND ALGEBRA.

SECOND YEAR.—*Class I.*—Goff, Giles, Pedley, Campbell, Cross, Naismith, Le Rossignol, Bryan, Day. *Class II.*—Lindsay, Pritchard; Mason and McLea and Ritchie, equal; Macallum and Martin, equal; Curtis. *Class III.*—Morison; McPhail and Palmer, equal; Evans; England and McFee, equal; Hall, Jamieson (W. L.); Massé and Simpson, equal; Howitt, Sweeny, Murphy, Duke, Murray, Moss.

FIRST YEAR.—*Class I.*—Stevenson, Gibson, Deeks. *Class II.*—Smith. *Class III.* *Bott and *Robertson, equal; Rogers, Meighen, Lucas, Walsh, McKenzie; Swanson and Watt, equal; *Bell and Henderson, equal; *Warden, *Holden, Shepherd.

GEOMETRY AND ARITHMETIC.

SECOND YEAR.—*Class I.*—McLea and Ritchie, equal; Pedley (H.), Curtis, Le Rossignol, Morison, Giles, Day; Cross and Goff, equal; McFee. *Class II.*—Pritchard, Bryan; Mason and Naismith (P. L.), equal; Macallum, England, Campbell, Evans. *Class III.*—Hall, Martin, Sweeny, McPhail, Howitt, Duke; Lindsay and Murphy, equal; Murray, Bryson, Massé, Simpson, Jamieson (W. L.). Thurlow.

FIRST YEAR.—*Class I.*—Stevenson, Deeks; Gibson and Rogers, equal; Smith *Holden. *Class II.*—Watt, *Robertson, Moore, McKenzie (R. T.), Swanson; Walsh and *Scott, equal; *Bott. *Class III.*—*Bell, *Garth, Lucas, Parker, Meighen; Grant and Shepherd, equal; White, Henderson, *McLeod (J. W.), Buchanan.

EXPERIMENTAL PHYSICS, (*Light and Heat*).

B.A. ORDINARY.—*Class I.*—Topp, MacDougall, McOuat, Clerk. *Class II.*—None. *Class III.*—Evans, Blair, McRae, Holden, Chalmers, Bell, Wallace.

THIRD YEAR.—*Class I.*—Johnson (A. R.); Johnstone (R.) *Class II.*—None. *Class III.*—Patton, McLeod.

B.A. ORDINARY.—(*Additional*) *Electricity, Magnetism and Sound.—Class I.* - Evans. *Class II.*—None. *Class III.*—Bell, Chalmers, Holden.

Honour Examinations in Mathematics and Natural Philosophy.

B.A. EXAMINATION.—*First Rank Honours and Molson Gold Medal.*—Topp, Francis

THIRD YEAR.—*First Rank Honours* —Johnson (A. R.), *Prize.*

SECOND YEAR.—*Second Rank Honours.*—Goff, (*Prize.*)

FIRST YEAR.—*Second Rank Honours.*—Deeks (*Prize.*)

FRENCH.

B.A. ORDINARY.—*Class I.*—Clerk and Ritchie, equal; Dalpé, Clements, Hibbard, Patterson. *Class II.*—O'Sullivan. *Class III.*—Blair.

ADDITIONAL DEPARTMENT.—*Class I.*—Clements, Ritchie, Clerk. *Class II.*—None. *Class III.*—None.

THIRD YEAR.—*Class I.*—Patton. *Class II.*—Solandt, McArthur. *Class III.*—Internoscia, Nichols, Cameron, Colby. Henderson, R. B.

ADDITIONAL DEPARTMENT.—*Class I.*— Patton, Solandt. *Class II.*—Internoscia *Class III.*—None,

SECOND YEAR.—*Class I.*—Curtis (*Prize*) and Ritchie equal (*Prize*) (*Alliance française*); McLea; Day and Le Rossignol and McFee, equal; Cross, Massé. *Class II.*—Palmer, McPhail, Evans; Mason and Simpson, equal, Bryson. *Class III.*—Morison and Pedley, equal; Moss, *Murphy; Howitt and Murray, equal; Bryan; Duke and England, equal; Hall.

FIRST YEAR.—*Class I.*—Stevenson (*Prize*), Rogers (*Prize*), White. *Class II.*—Henderson and Walsh, equal. *Class III.*—Buchanan and *Dunlop. equal; *Garth; *Holden and Lucas, equal; Moore.

GERMAN.

B.A.—*Ordinary.*—*Class I.*—Ritchie, P. E.

B.A.—*Additional Department.*—*Class I.*—Ritchie, P. E.

THIRD YEAR.—*Ordinary.*—*Class II.*—Patton.

THIRD YEAR.—*Additional.*—*Class I.*—Patton.

SECOND YEAR.—*Class I.*—Ritchie, O. G. (*Prize*), Macfarlane, McFee, Cross, Martin, Palmer. *Class II.*—Van Horne, Murray, Murphy. *Class III.*—Sweeny.

FIRST YEAR.—*Class I.*—Gibson and *Johnson (H.) and Meighen, equal; Stevenson, Morgan, Grant. *Class II.*—None. *Class III.*—Lucas.

(*Prizes*), Gibson, Meighen, Stevenson.

HEBREW.

ADVANCED COURSE.—*Class I.*—MacLennan, M. (*Prize*).—*Class II.*—McWilliams Sparling, Sanders. *Class III.*—McRae (D. A.), Roberts, McLeod (M. J.), Whyte (C. W.)

THIRD YEAR.—*Additional.*—(*Chaldee*).—*Class I.*—MacLennan (M.), Sanders.

INTERMEDIATE COURSE.—*Class I.*—Macallum. (*Prize*), Lindsay, Thurlow MacKenzie (M.) *Class II.*—Clay, Pritchard, Naismith (P. L.). *Class III.*—*McLeod, (A), *McLean (J. A.).

ELEMENTARY COURSE.—*Class I.*—Deeks (*Prize*), Campbell, Swanson, *Bell (W. J.), Giles, Parker. *Class II.*—Rochester, *Vessot, Larkin, Russell, *Robertson (Jas.), *Scott (C. T.). *Class III.*—Langton, *Lods, *Cayer Smith (Geo. H.), Watt, *Jamieson (W. J.), *McLeod (J. W.), *Côté.

The Neil Stewart Prize.—Grant, A. S. (B.A.).

NATURAL SCIENCE.

B.A. ORDINARY.—(*Geology and Mineralogy.*)—*Class I.*—Swabey, Livingstone. *Class II.*—Evans, McOuat, Sparling, Bell, McWilliams. *Class III.*—Chalmers, Holden, Roberts, Hargrave.

(*Geology only*).—*Class II.*—*Mounteer. *Class III.*—*McLean.

THIRD YEAR.—(*Zoology*).—*Class I.*—Murray (*Prize*), Walsh, Nicholson, *Mounteer McArthur. *Class II.*—Brown and Kingston equal; *Smith, Solandt *Henderson, *Harris. *Class III.*—Bourne, Gerrie, *McKenzie, Internoscia.

THIRD YEAR.—(*Additional Department, Theoretical and Practical Chemistry*).—*Class I.*—Walsh.

Passed in Theoretical Chemistry.—*Class III.*—Kingston.

THIRD YEAR.—(*Additional Botany*).—*Class I.*—Murray, Kingston.

SECOND YEAR.—(*Botany*).—*Class I.*—Howitt (*Prize*) and McLea (*Prize*), equal Le Rossignol, Curtis, *Baldwin, *Darey, *Blackader; Evans and Simpson, equal; McFee and *Van Horne, equal; Macallum; Campbell (C.A.); Mason and Ritchie, equal; Palmer and *Kerruish, equal; Cross, Day; Giles and Pedley, equal; Lindsay. *Class II.*—Moss, *Hunt, Bryson; Bryan, Morison and *Truax, equal; *Swabey (I.); *Swabey (L.) and Martin, equal; Murray, *Murphy and Duke, equal. *Class III.*—Naismith Pritchard, Goff, McPhail, Thurlow, Jamieson, Massé, England, Hall.

CHEMISTRY.

FIRST YEAR.—*Class I.*—Gibson, *Morgan, Deeks, Stevenson. *Class II.*—*McGregor, Smith. *Class III.*—*Scott; *Robertson and Meighen, equal; Rogers, Giles (2nd Year), Swanson, Evans, Lucas, *Garth, Parker, Campbell (2nd Year); Henderson and Shepherd, equal; Walsh, MacKenzie, *Hay; *Holden and Watt, equal; *MacCaskill, Moore, Warden.

Prizes.—Gibson, Stevenson.

METEOROLOGY.

Class I.—McOuat and Topp, equal. *Class II.*—None.

MORRIN COLLEGE.

INTERMEDIATE EXAMINATION.

GREEK.—*Class I.*—Donn.

LATIN.—*Class I.*—Donn.

TRIGONOMETRY AND ALGEBRA.—*Class I.*—Donn.

GEOMETRY AND ARITHMETIC.—*Class II.*—Donn.

LOGIC.—*Class II.*—Donn.

ENGLISH.—*Class II.*—Donn.

FRENCH.—*Class II.*—Donn.

SPECIAL COURSE FOR WOMEN. (DONALDA ENDOWMENT.)

PRIZES AND STANDING.

SECOND YEAR.

MCLEA, ROSALIE, McD.—(Girls' High School, Montreal)—First Rank General Standing, †Prize in Botany, †Prize in Logic.

RITCHIE, OCTAVIA G.—(Girl's High School, Montreal.)—First Rank General Standing, Prize in French (Alliance Francaise) †Prize in German.

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†From income of Hannah Willard Lyman Memorial Fund.

PASSED THE SESSIONAL EXAMINATIONS.

McLea, Ritchie, Cross, McFee, Simpson, Evans, Murray, Murphy.

PASSED IN CERTAIN CLASSES AS PARTIAL OR OCCASIONAL STUDENTS.

Blackader, Van Horne, Darey, McFarlane, Swabey (Ida), Swabey (Lilly).

FIRST YEAR.

Stevenson, (Mildred A.)—(Oxford High School, England).—First Rank General Standing, †Prize in Chemistry, †Prize in English, †Prize in German, †Prize in French.

PASSED THE SESSIONAL EXAMINATIONS.

Stevenson, Henderson.

PASSED IN CERTAIN CLASSES AS PARTIAL OR OCCASIONAL STUDENTS.

Bott, Johnson H., Morgan.

SUPPLEMENTAL EXAMINATIONS, 1885-6.

PASSED.

I. September, 1885.

UNDERGRADUATES.

(*a*) Supplemental Sessional.

THIRD YEAR.—Bell, Holden E. de F.
SECOND YEAR.—Solandt.

(*b*) Supplemental in one subject.

SECOND YEAR.—Bourne, Internoscia.
FIRST YEAR.—England, Jamieson, (W. L.), Moss, Naismith (P. L.)

II. February, 1886.

(Supplemental to Christmas Examinations.)

(*a*).—Supplemental in two or more subjects.

FIRST YEAR.—Lucas, Moore.

(*b*).—Supplemental in one subject.

FOURTH YEAR.—O'Sullivan.
FIRST YEAR.—Buchanan.

SPECIAL COURSE FOR WOMEN.

PASSED SUPPLEMENTAL EXAMINATIONS, FEB., 1885.

Blanche, Evans B.

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†From income of Hannah Willard Lyman Memorial Fund.

FACULTY OF APPLIED SCIENCE.

GRADUATING CLASS.

JOHN GEORGE GALE KERRY.—British Association Gold Medal; $25 Mathematical Prize; Prizes in Theory of Structures, Steam, Hydraulics, Designing, Drainage and Materials.

ARTHUR WEIR.—Lansdowne Silver Medal.

WILLIAM MURRAY REID.—Leslie Skelton Prize for Summer Report; Prize in Mechanical Work.

CHARLES PERCY BROWN—Second Bank Honours in Natural Science; Leslie Skelton Prize for Summer Report.

NEVIL NORTON EVANS.—Prize in Chemistry and Mineralogy.

THIRD YEAR.

ROBERT EDWARD PALMER.—$25 Mathematical Prize; Prizes in Descriptive Geometry, Theory of Structures and Drainage.

WILLIAM ARTHUR CARLYLE.—Watson Prize in Chemistry; Prize in Mathematical Physics; Prize in Mining.

WALTER FREDERICK FERRIER.—Prize in Geology and Mineralogy; Prize in Experimental Physics.

PASSED THE SESSIONAL EXAMINATIONS.

Civil Engineering (*Advanced Course.*)

Robert Edward Palmer.

Civil Engineering (*Ordinary Course.*)

Raoul Rinfret; Victor Frederick W. Forneret; John Plaw Ball; Daniel Taylor.

Mining Engineering.

William Arthur Carlyle; Walter Frederick Ferrier.

SECOND YEAR.

MARSHALL WILLARD HOPKINS.—Prizes in French, Zoology, Mathematics, Mathematical Physics, Experimental Physics, Descriptive Geometry, Surveying, Materials.

EDGAR SYDNEY M. LOVELACE.—$25 Mathematical Prize; Prizes in Surveying and Mechanism.

ARTHUR LENNOX DRUMMOND.—Prizes in Materials and Mechanical Work.

ROBERT F. OGILVIE.—Prize in Mechanism.

PASSED THE SESSIONAL EXAMINATIONS.

Civil Engineering.

Marshall Willard Hopkins; Edgar Sydney M. Lovelace; Alfred Joseph Tremblay.

Mechanical Engineering.

Arthur Lennox Drummond; Robert Forrest Ogilvy; Arthur Edward Childs.

Mining Engineering.

James Hislop; Charles Green; Charles Herbert Macnutt.

FIRST YEAR.

ALBERT G. MCFARLANE.—Prizes in English and Mathematics.

GEORGE MORSE EDWARDS.—Prizes in Chemistry and German.

MALCOLM C. MCFARLANE.—Prize in Mathematics.

WALTER D. MACFARLANE.—Prize in Freehand Drawing.

PASSED THE SESSIONAL EXAMINATIONS.

Albert G. McFarlane; George Morse Edwards; Malcolm C. McFarlane; Milton L. Hersey; Andrew Young; Walter D. MacFarlane; John S. Warren.

STANDING IN SPECIAL SUBJECTS.

REPORTS AND ESSAYS PREPARED DURING THE SUMMER OF 1885.

FOURTH YEAR.—*Class I.*—Brown (*Prize*) (*The New Croton Aqueduct*) and Reid (*Prize*) *Locomotive, Valve Motion*, and Weir, (*The Correlation of the Elements*), equal; Cowie (*International Bridge*); Dawson (*Louise Embankment and Docks*) and Trueman (*Swing-bridge over the Narrows, Halifax*), equal. *Class II.*—Evans (*Petroleum*). *Class III.*—Kerry, (*Section of Canadian Pacific Ry.*); McCarthy (*A Horizontal Steam-engine*) and Pitcher (*Wells*), equal.

THIRD YEAR.—*Class I.*—Ferrier (*Iron Mines, Mineville*), Palmer (*Hydrographic Surveying*), Carlyle (*Survey in the Laurentides*). *Class II.*—Ball (*Post Office at Charlottetown, P.E.I.*) and Rinfret (*Tunnels and Tunnelling*), equal; Forneret (*Effect of Frost on Building Materials*). *Class III.*—Taylor (*Economic Minerals of the Eastern Townships.*)

SECOND YEAR.—*Class I.*—Carmichael (*Locomotive Boiler*), Lovelace (*Floor and Bench Moulding*). *Class II.*—Eneas (*The Lathe*); Childs (*the Lathe*) and Ogilvy (*the Lathe*), equal; May (*Ottawa Waterworks*), and Macnutt (*Blasting Explosives*), equal; *Class III.*—Walters (*Oils*), Hamilton (*Manufacture of Cast-Iron*).

FREEHAND DRAWING.

FIRST YEAR.—*Class I.*—McFarlane (W. D.) (*Prize*). *Class II.*—McKenzie, Young. *Class III*—Hersey, Edwards, Warren, McFarlane (M. C.), McFarlane (A. G.) Bertrand.

DESCRIPTIVE GEOMETRY.

THIRD YEAR.—*Class I.*—Palmer (*Prize*). *Class II.*—Rinfret and Forneret, equal; *Class III.*—Taylor, Ball.

THIRD YEAR.—(*Mining*).—*Class I.*—None. *Class II.*—Carlyle, Ferrier.

SECOND YEAR.—*Class I.*—Hopkins, (*Prize*). *Class II.*—Drummond; Carmichael and Hislop, equal; Ogilvy; Green and Lovelace, equal; Macnutt Childs, Tremblay. *Class III.*—May, Hamilton.

MECHANISM.

SECOND YEAR.—*Class I.*—Lovelace (*Prize*) and Ogilvy (*Prize*), equal. *Class II.*—Childs and Drummond and Hopkins, equal; Macnutt and Green, equal; Carmichael. *Class III.*—Hislop and Eneas and May, equal; Tremblay and Hamilton, equal.

MECHANICAL WORK.

SECOND YEAR.—*Class I.*—Childs and Drummond, equal; Carmichael. *Class II.* May, Ogilvy, Eneas.

DYNAMICS OF MACHINERY.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Reid.

STEAM-BOILERS AND CUTTING-TOOLS.

FOURTH YEAR.—*Class I.*—Reid.

LOCOMOTIVE CONSTRUCTION.

FOURTH YEAR.—*Class I.*—Reid (*Prize*).

SECOND YEAR.—*Class I.*—Carmichael; Childs and Drummond, equal; *Class II*—Eneas, May, Ogilvy.

THEORY OF STRUCTURES.

FOURTH YEAR.—(*Civil Engineering Course*).—*Class I.*—Kerry (*Prize*). *Class II.*—Cowie.—*Class III.*—Trueman, Dawson.

FOURTH YEAR.—(*Mechanical Engineering Course*).—*Class I.*—None. *Class II*—None. *Class III.*—Reid.

THIRD YEAR.—*Class I.*—Palmer (*Prize*). *Class II.*—Carlyle, Ferrier. *Class III.*—Rinfret, Forneret, Ball.

SURVEYING.

THIRD YEAR.—*Class I.*—Palmer. *Class II.*—Rinfret. *Class III.*—Ball, Taylor.

SECOND YEAR.—*Class I.*—Lovelace (*Prize*) and Hopkins (*Prize*), equal; *Class II.*—Macnutt, Childs, Drummond, Hislop, Tremblay, Ogilvy, Green, McLennan. *Class III.*—Eneas, Hamilton.

MATERIALS.

FOURTH YEAR.—*Class I.*—Kerry (*Prize*), Reid; Brown and Cowie and Trueman, equal; Dawson.

THIRD YEAR.—*Class I.*—Palmer, Carlyle, Ferrier. *Class II.*—Taylor; Rinfret and Forneret, equal; Ball.

SECOND YEAR.—*Class I.*—Drummond (*Prize*) and Hopkins (*Prize*), equal; Carmichael; Childs and Lovelace, equal. *Class II.*—Ogilvy and May, equal; Eneas. *Class III.*—McLennan, Tremblay.

HYDRAULICS.

FOURTH YEAR.—*Class I.*—Kerry (*Prize*). *Class II.*—Dawson, Brown Cowie. *Class III.*—Trueman, Reid.

STEAM.

FOURTH YEAR.—*Class I.*—Kerry (*Prize*). *Class II.*—Cowie; Dawson and Reid, equal. *Class III.*—Trueman, Brown.

DESIGNING.

FOURTH YEAR.—*Class I.*—Kerry, Reid, Cowie. *Class II.*—Brown and Dawson and Trueman, equal.

DRAINAGE.

FOURTH YEAR.—*Class I.*—Kerry (*Prize*), Cowie, Dawson, Trueman.

THIRD YEAR.—*Class I.*—Palmer (*Prize*). *Class II.*—Taylor, Forneret, Ball, Rinfret.

SECOND YEAR.—*Class I.*—Hopkins.

ESSAY.

FOURTH YEAR.—*Analysis of Mineral Phosphates.—Class I.*—Evans.
Impact of Water.—Class I.—Cowie, Dawson.
Lubrication and Friction.—Class I.—Reid and Trueman, equal.
Thermodynamic Laws.—Class I.—Kerry.
Ventilation of Mines.—Class I.—Brown.
Montreal Water.—Class I.—Weir.

THIRD YEAR.—*Lubrication and Friction.—Class I.*—Palmer. *Class II.*—Taylor, Ball, Rinfret, Forneret.
Lighting of Mines.—Class I.—Carlyle and Ferrier, equal.

SECOND YEAR.—*Fuel.—Class I.*—None. *Class II.*—May and Tremblay, equal.

Gold Mines of Canada.—Class I.—Macnutt, Hislop, Hamilton, Green.

Lubrication and Friction.—Class I.—Drummond and Lovelace, equal; Carmichael and Hopkins and Ogilvy, equal; Childs, *Class II.*—May and Tremblay, equal; Eneas.

Manufacture of Nitric Acid. Class I.—None. *Class II.* Walters.

ZOOLOGY.

SECOND YEAR.—*Class I.*—Hopkins (*Prize*), Lovelace. *Class II.*—Macnutt, Hislop. *Class III.*—Hamilton, McLennan, Tremblay.

GEOLOGY AND MINERALOGY, (*Advanced*).

FOURTH YEAR.—(*Mining Course*).—*Class I.*—Brown.

MINERALOGY (*Advanced*).

FOURTH YEAR.—(*Chemistry Course*).—*Class I.*— Evans (*Prize*), Weir.

THIRD YEAR.—(*Mining Course*).—*Class I.*—Ferrier, Carlyle.

CHEMISTRY.

FOURTH YEAR.—(*Chemistry Course.*)—*Class I.*—Evans (*Prize*), Weir.

THIRD YEAR.—(*Mining Course*).—*Class I.*—Carlyle, Ferrier.

SECOND YEAR.—(*Mining Course*).—(*Class I.*) None. *Class II.*—Macnutt, Green, Hamilton, Hislop.

SECOND YEAR.—(*Chemistry Course*).—*Class I.*—None. *Class II.*—None. *Class III* —Walters.

FIRST YEAR—*Class I.*—Edwards (*Prize*), McFarlane (A. G.), McFarlane (M. C. *Class II.*— Warren, Young, MacFarlane (W. D). *Class III.*—Hersey.

(*Students in Arts.*)

Class II— Gibson. *Class III*—Evans.

ASSAYING.

FOURTH YEAR.—(*Mining Course*)—*Class I.*—Brown.

METALLURGY.

FOURTH YEAR.—(*Mining and Chemistry Courses*)—*Class I.*—Evans, Weir. *Class II*— Brown.

FOURTH YEAR.—(*Mechanical Engineering, Metallurgy of Iron.*)—*Class I.*— None. *Class II.*—Reid.

MINING.

THIRD YEAR.—*Class I.*—Carlyle (*Prize*), Ferrier.

GEOLOGY AND MINERALOGY.

THIRD AND FOURTH YEARS.—*Class I.*—Ferrier (*Prize*), Carlyle. *Class II.*—Evans, Weir, Palmer. *Class III.*—Rinfret, Ball, Forneret, Taylor.

BOTANY.

SECOND YEAR.—*Class II.*—Green.

MATHEMATICS.

THIRD YEAR.—*Class I.*—Palmer and Rinfret, equal. *Class II.*—Taylor, Ball, Forneret.

THIRD YEAR.—(*Advanced*).—Palmer, Rinfret.

SECOND YEAR.—*Class I.*—Hopkins (*Prize*), Lovelace, Drummond, Hislop. *Class II.*—Ogilvy, Green. *Class III.*—Tremblay.

FIRST YEAR.—*Class I.*—McFarlane (A. G.) (*Prize*), McFarlane (M. C.), (*Prize*), Edwards. *Class II.*—Hersey, MacFarlane (W. D.), Young. *Class III.*—Warren (Supl. in Trig.)

MATHEMATICAL PHYSICS.

THIRD YEAR.—*Class I.*—Carlyle (*Prize*). *Class II.*—Palmer, Taylor; Ferrier and Rinfret, equal. *Class III.*—Ball, Forneret.

SECOND YEAR.—*Class I.*—Hopkins (*Prize*). *Class II.*—Drummond, Hislop, Lovelace, Childs. *Class III.*—Green, McLennan, Tremblay, May, Macnutt, Ogilvy.

EXPERIMENTAL PHYSICS (*Light and Heat*).

THIRD YEAR.—*Class I.*—Ferrier (*Prize*), Rinfret, Carlyle, Palmer. *Class II.*—None. *Class III.*—Forneret, Ball.

SECOND YEAR.—*Class I.*—Hopkins (*Prize*), Hislop, Drummond, Childs, Green. *Class II.*—Macnutt. *Class III.*—Ogilvy, Hamilton, Lovelace, May, Carmichael, Tremblay, McLennan, Eneas.

ENGLISH COMPOSITION.

THIRD YEAR.—*Class I.*—Ferrier and Carlyle, equal. *Class II.*—Taylor. *Class III.*—Forneret, Ball.

SECOND YEAR.—*Class I.*—Hislop. *Class II.*—Hopkins, Lovelace, Carmichael, Macnutt, Drummond. *Class III.*—Green, Eneas; Ogilvy and May, equal; Childs, Hamilton, Tremblay.

ENGLISH LITERATURE AND ANALYSIS.

FIRST YEAR.—*Class I.*—McFarlane (A. G.) (*Prize*); Edwards and MacFarlane (M. C)., equal. *Class II.*—Young, Warren. *Class III.*—Hersey, MacFarlane (W. D.)

FRENCH.

SECOND YEAR.—*Class I.*—Hopkins (*Prize*). *Class II.*—Lovelace, Green. *Class III.*—Drummond, Tremblay, Walters, Ogilvy.

FIRST YEAR.—*Class I.*—McFarlane (A. G). *Class II.*—McFarlane (M. C.) MacFarlane (W. D.) Warren.

German.

THIRD YEAR.—*Class III.*—Ball.

SECOND YEAR.—*First Division.*—*Class I.*—None.—*Class II.*—Hislop. *Class III.*—Carmichael.

SECOND YEAR.—*Second Division.*— *Class I.* None. *Class II.*—Eneas, Childs.—*Class III.*—Macnutt, McLennan.

FIRST YEAR.—*Class I.*—Edwards (*Prize*) *Class II.*—Hersey. *Class III.* Young.

THE WICKSTEED GOLD, SILVER AND BRONZE MEDALS FOR PHYSICAL CULTURE.

EXAMINATIONS FOR 1885-6.

FRANCIS PEDLEY.—Gold Medal.

HILTON PEDLEY.—Silver Medal.

THOMAS PRITCHARD.—Bronze Medal.

CHARLES SWABEY, NELSON V. YATES, WM. PATTERSON, V. P. G. RITCHIE.
Entitled to Honorable mention.

Graduates of the University.

DOCTORS OF DIVINITY.

*Bethune, Rev. John, [ad eundum]. 1843
*Falloon, Rev. Daniel [Hon]..... 1844

DOCTORS OF LAWS AND OF CIVIL LAW.

Abbott, Christopher, B.C.L. (D.C.L., in course)..... 1862
Abbott, Hon. J. J. C., B.C.L. (D.C.L. in course)..... 1867
*Adamson, Rev. Wm. A. (D.C.L. hon)..... 1850
Badgeley, Hon. Wm. (D.C.L. hon). 1843
*Bancroft, Rev. C., D.D. (LL.D. hon) 1870
Blackwood, Right Hon. Frederick Temple Hamilton, Earl of Dufferin (LL.D. hon)..... 1878
Blanford, William Thomas (LL.D. hon)..... 1884
Bond, Rev. Wm., M.A. (LL.D. hon). 1870
Bonney, Rev. Thomas George, D.Sc. (LL.D. hon) 1884
Bramwell, Sir Frederick Joseph (LL.D. hon)..... 1884
Butler, Thomas P., B.C.L. (D.C.L. in course)..... 1881
Campbell, Right Hon. Sir John Douglass Sutherland, Marquis of Lorne (LL.D. hon)..... 1883
*Campbell, George W., M.A., M.D. (LL.D. hon) 1875
Chamberlin, B., M.A., B.C.L. (D.C.L. in course) 1867
Chauveau, Hon. Pierre J. O. (LL.D. hon) 1857
Cordner, Rev. John (LL.D. hon) .. 1870
Cornish, Rev. George, M.A., (LL.D. in course) 1872
*Cushing, Lemuel, M.A. (LL.D. in course)..... 1879
Darey, Pierre J., M.A., B.C.L. (LL.D. hon) 1886
Davidson, Charles Peers, M.A., B.C.L. (D.C.L. in course)..... 1875
*Davies, Rev. Benjamin, Ph.D. (LL.D. hon) 1856
Dawson, John William, M.A. (LL.D. hon) LL.D. Edin..... 1857
*DeSola, Rev. A. (LL.D. hon)..... 1858
Douglass, Rev. Geo. (LL.D. hon).. 1870
*Doutre, Gonzalve, B.C.L. (D.C.L. in course)..... 1873
Duff, Rev. Archibald, M.A. (LL.D. in course)..... 1881
*Falloon, Rev. D., D.D. (LL.D. hon)..... 1862
Frankland, Edward, M.D., D.C.L., Ph.D. (LL.D. hon)..... 1884
Frechette, Louis H. (LL.D. hon)... 1881
Galton, Douglas C. B., D.C.L. (LL.D. hon) 1884
Gauthier, Zéphirin, B.C.L. (D.C.L. in course) 1883
Gilman, Francis E., M.A., B.C.L. (LL.D. in course) 1877
Girouard, Désiré, B.C.L. (D.C.L. in course)..... 1874
Gray, Asa, LL.D. (LL.D. hon)..... 1884
Hall, James (LL.D. hon) 1884
Harcourt, Augustus George Vernon, M.A. (LL.D. hon)..... 1884
*Head, Right Hon. Sir Edmund W., Baronet, M.A. (LL.D. hon). 1862
Hemming, Edward J., B.C.L. (D.C.L. in course)..... 1871
*Holmes, Andrew F., M.D. (LL.D. hon) 1858
Howard, R. P., M.D. (LL.D. hon). 1886
Howe, Henry Aspinwall, M.A. (LL.D. hon) 1870
Hunt, T. Sterry, M.A. (LL.D. hon). 1865
Jenkins, Rev. John (D.D. Univ. N.Y.) (LL.D. hon)..... 1879
Kerr, William H. (D.C.L. in course) 1873
Kirby, James, M.A., B.C.L. (D.C.L. in course) (LL.D. in course) 1874
Laflamme, Hon. R. G., B.C.L. (D.C.L. in course) 1873
Lawson, G., Ph.D. (LL.D. hon)..... 1862
*Lafrenaye, P. R., B.C.L. (D.C.L. in course)..... 1873
Leach, Rev. Wm. T., M.A. (D.C.L. hon) 1849
(LL.D. hon)..... 1857
Lefroy, Sir John Henry, C.B., K.C.M.G. (LL.D. hon)..... 1884
*Logan, Sir William E., Kt. (LL.D. hon). 1856
*Lundy, Rev. Francis (D.C.L. hon)..... 1843
Lyall, Rev. W. (LL.D. hon)..... 1864
Macdonald, Sir John Alexander, K.C.B., D.C.L. (LL.D. hon)..... 1884
McGregor, James, M.A. (LL.D. in course) 1880
MacVicar, Rev. D. H. (LL.D. hon). 1870

Meredith, Edmund A., B.C.L. (LL.D. hon) 1857
Miles, Hy. H., M.A. (LL.D. hon)... 1866
Morris, Hon. Alexander, M.A., B.C.L. (D.C.L. in course)..... 1862
Morrison, Rev. Jas. D., M.A. (DD. Union College N.Y.) (LL.D. in course) 1880
Moseley, Henry Nottidge, M.A. (LL.D. hon) 1884
Omnaney, Sir Erasmus (LL.D. hon) 1886
Parkman, Francis (M.A. Harvard) (LL.D. hon) 1879
Petty-Fitzmaurice, Henry Charles Keith, Marquis of Lansdowne LL.D. hon) 1884
Playfair, Sir Lyon, K.C.B., Ph.D., LL.D. (LL.D. hon)..... 1884
Robins, Sampson Paul, M.A. (LL.D. in course) 1880
Rollitt, Albert K. (LL.D. London Univ.,) (LL.D. ad eun)..... 1871
Roscoe, Sir Henry Enfield, Ph.D , LL.D. (LL.D. hon)..... 1884
Roy, Rev. James, M.A. (ad eun) (LL.D. in course)..... 1883
Selwyn, Alfred R. C., F.R.S. (LL.D. hon) 1881
*Smallwood, Charles, M.D. (LL.D. hon) 1856
*Smith, William Stuart (LL.D. hon) 1858
Strutt, John William, Lord Rayleigh, M.A., D C.L. (LL.D. hon). 1884
Temple, Sir Richard, Bart., D.C.L., LL.D. (LL.D. hon)..... 1884
Thomson, Sir William, M.A., LL.D , D C.L. (LL.D. hon)..... 1884
Tylor, Edward Burnett, D.C.L., LL.D. (LL.D. hon)..... 1884
*Vallières de St. Real, Hon. J. R. (D.C.L. hon)..... 1844
Wickes, Rev. Henry (LL.D. hon) .. 1868
Wicksteed, Richard J. M. A. (LL.D. in course)..... 1879
Wilkes, Rev. Henry, M.A., D.D. (LL.D. hon) 1870
Wilson, Daniel, LL.D.(LL.D. hon). 1884
Wurtele, Hon. J. S. C., B.C.L. (D.C.L. in course)..... 1882

*Deceased.

DOCTORS IN MEDICINE.

Addison, Jas. L., St. George, O 1884
*Adsetts, John, 1866
Alexander, Robert A., Grimsby, O 1871
Alguire, Duncan O., Cornwall, O 1873
Allard, Henry, Belœil, Q 1866
†Allan, Hamilton, Oconto, Wis 1872
Allan, J. H. B., Montreal 1885
Allen, C. E., East Farnham, Q 1883
Alloway, Thomas Johnson, Montreal 1868
Anderson, Alex., Med. Dept. Indian Army 1866
*Anderson, John C., 1865
Archer, Ths., Wandsworth, Eng 1869
Ardagh, Johnson, Orillia, O 1869
Armitage, J. H., Newmarket, O 1880
Armstrong, Geo. E., Montreal 1877
*Arnoldi, Daniel (Hon.), 1847
Arthur, R. H., C.P.R.R. 1885
Atkinson, Robert, 1862
Ault, Alexander, Ochkosh, Wis 1860
Ault, Charles, Montreal 1855
*Ault, James F., 1855
Ault, Edwin D., Aultsville, O 1868
Austin, Fred. John, Sherbrooke, Q 1862
Ayer, N., M.A., Sackville, N.B 1880
Aylen, John, Aylmer, Q 1857
Aylen, James, Aylmer, Q 1863
Aylen, P., Aylmer, Q 1886
Backhouse, J. B., Braidwood, Ill 1870
Bain, D. S. E., Staff Surgeon Maj. 1868
Bain, Hugh U., Prince Albert, Man 1874
Baird, James G., Pakenham, O 1870
Baird, T. A. D., Bay City, Mich 1885
Baker, Albert, Dawlish, Devon 1848
Barclay, George, Parkhill, O 1870
*Barnston, James [ad eun] 1856
Barrett, Jos. A., Fenaghvale, O 1884
Battersby, Charles, Port Dover, O 1861
Baynes, Donald, M.A., London, Eng 1876
Baynes, George Aylmer, London, Eng 1869
Beatty, D., Richmond, Carlt. Co., O 1862
*Beaudette, Alfred, 1865
Beaudry, Louis B., St. Cesaire, Q 1871
Beckstead, M., Lisbon Centre, St Law. Co., N Y 1878
†Bell, James, Montreal 1877
*Bell, John, M.A , 1866
Bell, Robert, C. E., Ottawa 1878
Bell, Robert W., Peterboro, O 1873
Belleau, Alfred, Quebec 1862
*Bergeron, Joseph, 1870
Bergin, Darby, Cornwall, O 1847
Bessey, William E., Toronto, O 1863
Bender, Prosper, Boston, Mass 1865
Benson, Joseph B., Chatham, N B 1875
*Bibaud, Jean G., 1843
†Birkett, H. S., Montreal 1886
Blackader, Alex. D., B.A., Montreal 1871
Blacklock, John J., Chesterville, O 1851
*Blanchet, J. B., 1863
Blair, Robert C., Three Rivers, Q 1865
*Bligh, John W., 1865
Bogart, Irvine D., Mene, O 1859
Boggs, G. W., Wolfville, N S 1886
*Bomberry, Geo. E., 1875
Bonesteel, S. A., Columbus, Neb 1881
Boulter, George H., Stirling, O 1852

Bowser, J. C., Kingston, N B 1883
*Boyer, Lonis, 1842
*Boylan, Andrew A., 1857
Boyle, Albert D., Carbonear, Nfld 1877
*Bowman, William E., 1860
Bower, Silas J., Waddington, N Y 1865
*Bradley, William, 1869
*Braithwaite, Francis H., 1863
Brandon. John, Ancaster, O 1867
Breslin, William I., 46th Regiment 1847
Brigham, Josiah S., Phillipsburg, Q 1848
Brissette, Henri R., Lowell, Mass 1871
*Bristol, Amos S , 1850
Brodeur, Alphonse, Roxton Falls, Q 1863
Brodie, John, Honolulu, Sdwh Isl 1877
Brooks, Samuel T., St Johnsbury, Vt 1851
*Brouse, Willlam H., 1847
Brouse, Jacob E., Brockville, O 1861
Brossard, J. B. J., Laprairie, Q 1875
Brown, Thomas L., Melbourne, Q 1881
Brown, J. L., Plattsville, O 1879
Brown, Peter E., Ste Anne de Bellevue, Q 1863
Brown, Harry, 405 W. Washington St, Chicago 1873
Brown, Chs. O., Brome, Q 1882
Browne, Arthur A., B.A., Montreal 1872
Bruneau, Adolphe, Sorel, Q 1853
*Bruneau, Olivier T. (Hon), 1843
*Bruneau, Onesime, 1851
Bryson, William G., Fenelon Falls, O 1867
Bucke, Richard Maurice, London, O 1862
*Bucke, Edward H., 1852
*Buckle, John M. C., 1869
Buckley, William P., Prescott, O 1870
Bull, George J., New York 1869
*Bullen, Charles F., 1864
Buller, Frank, Montreal 1879
Burgess, J. A., Listowel, O 1868
Burch, B. F., Walla Walla, Walsh Ter 1866
*Burland, John H., 1863
Burland, Samuel C., Chester, Penn 1877
Burland, William B., Montreal 1872
Burland, William H., Wilshton, Fla 1875
Burland, Benj. W., Mineville, N Y 1882
Burrows, F. N., Montreal 1885
Burrows, Phillip P., Lindsay, O 1866
*Burnham, Robert Wilkins, 1869
*Burns, Alfred J., 1854
Burritt, Horatio C. Toronto, O 1863
Burwash, Hy. J., Milw. Ave., Chicago 1879
*Butler, George C., 1865
Butler, Billa F., Stirling, O 1879
*Buxton, John N., 1849
Cahalan, James. Wyandotte, Mich 1880
†Cameron. Chas., E., Montreal 1883
Cameron, D. A., Strathroy, O 1885
Cameron, Paul, Alexandria, O 1881
Cameron, Duncan H., Portland, Ore 1877
Cameron, James C., Montreal 1874
Cameron, John D., Norway, Mich 1878
*Campbell, Donald Peter, 1860
Campbell, Francis Wayland, Montreal 1860
*Campbell, G. W., M.A., (ad eun) 1843
Campbell, J., New Zealand 1876
*Campbell, Samuel, 1866
Campbell, John, Seaforth, O 1869
Campbell, Lorne, London, Eng 1882
Campbell, A. W., Montreal 1886
Cannon, Gilbert, Almonte, O 1877
Carmichael, D. A., Mar. Hosp. Serv. Cairo, Ill 1873
Carey, Augur, D. L. (ad eun), 1864
Carman, Philip E., Detroit, Mich 1879
Cassidy, David M., Med. Supt. County Asylum, Lancaster, Eng 1867
Cassidy, Geo. A., Goldstone, O 1885
Cassidy, John F., Goderich, O 1865
*Carroll, Robert W. W., 1859
Carruthers, Geo., North Bedeque, P.E I 1883
Carson, J. H., Lake Park, Minn 1881
*Carson, Augustus, 1843
Carter, Samuel A., Meadow Vale, O 1859
Case, W. Hermanus, Hamilton, O 1879
Casgrain, Charles E., Windsor, O 1851
Cattanach, Andrew J., Denver, Col 1871
Cattanach, Angus M., Dalhousie Mills, O 1882
Cattanach, W. S., Glen Water, O 1886
Chagnon, Vincelaus G. B., Fall River, Mass 1861
*Chaliner, Francis, 1849
Cherry, William, Toledo, Ohio 1869
* Chesley, George Ashbold, 1862
Chevalier, Gustave, Bedford, Q 1865
Chevalier, Napoleon E., Iberville, Q 1873
Chipman, C. J. H., B.A., Ottawa, O 1868
* Chisholm, Alex., Alexandria, O 1878
Chisholm, Murdoch, Bay Roberts, Nfld 1879
Christie, George H., Lachute, Q 1872
Christie, John B., Palaluma, Son Co., Cal 1865
Christie, Thomas, Lachute, Q 1848
Christie, John H., B.A., 833 W 22nd St., Chicago 1875
Christie, Edmund, Chicago 1882
* Church, Charles H., 1862
Church, Clarence R., Ottawa 1868
Church, Coller M., Aylmer, Q 1855
Church, F. W., Aylmer, Q 1880
Church, Levi R., Montreal, 1857
Church, Mills K., Merrickville, O 1864
* Church, Peter H., 1846
Clarke, Hy. J., Winnipeg, Man 1881
Clarke, Octavius H. E., Cohoes, N Y 1870
Clarke, Wallace, B.A., Utica, N Y 1871
Clarke, Henry J., Pembina, Dakota 1884
Clarke, Richard A., Essex Co., O 1870
Clarke, F. G. B., Fordwych Rd, Kilburn, London, Eng 1876
Clarke, J. L., Waterloo, Q 1886
Clemesha, John W., Port Hope, O 1867
Clement, Victor A., St. Guillaume, Q 1866
*† Cline, John D., B.A., 1874
Cluness, Daniel, Nanaimo, B C 1870
Codd, Alfred, Winnipeg, Man 1865
*Collins, Charles W., 1869
Colison, R., Norfolk, St Law. Co., N Y 1878
Colquhoun, George, Iroquois, O 1876
Comeau, John B., St David, Q 1870
Cook, Guy R., B.A., Louisville, N Y 1876
Cook, Hermon L., Napanee, O 1854
Cook, Sheldon E., Aultsville, O 1884
Cooke, Charles H., Toronto, O 1866
Cooke, Sydney P., Hull, Q 1869
Cooke, W. H., Wolfston, Q 1876
Copeland, Wm. L., 719 W Wash'n Chicago 1872
* Corbett, A. P. M., 1854
Corbett, William H., Brig. Surg Army Med Dept 1854
Corlis, Josiah, St. Thomas, O 1869
Cormack, Wm., Morristown, O 1881
* Corsan, John, 1869
Corson, Douglas, Woodstock, O 1885
Cotton, C. L., Cowansville, Q 1877
Cousins, W. C., Ottawa, O 1882

* Cowley Thomas McJ.,		1870
Cowley, D. K.,	Granby, Q	1880
Cox, Frank,	Charlottetown, P E I	1869
Coyle, Henry W.,	Sorel, Q	1876
Craig, Thornton,	Capay, Cal	1876
Craig, M. A.,	Glenwater, O	1886
Craik, Robert,	Montreal	1854
Cram, Daniel C.,	Lawrence, Kan	1872
* Crawford, James [ad eun].		1854
Crichten. Stuart,	Sonora, Cal	1865
Crocket, W. C., B.A.,	Fredericton, N B	1886
Crothers, William,	Stanbridge, Q	1879
* Culvers, Joseph B.,		1848
* Cuninghame, W. C. Thurlow		1858
Cutter, Frederick A.,	Sutton, Q	1873
		1868
Daly, Guy D. F.,		
Daly, Walter S.,	Ogdensburg, U S	1885
* Dansereau, Charles,		1842
Dansereau, Charles		1869
* Dansereau, Pierre,		1835
Davey, J. H.,	Philadelphia	1886
Davey, J. H.,	Philadelphia	1866
Davis, Thomas B.,	Chelsea, Q	1884
Davignon, F. F.,	Leadville, Col	1871
Dawson, R. B.A.,	Montreal	1882
Daze, Henri,	Montreal	1885
Dearden, G. A.,	Victoria, B C	1882
*Dease, Peter Warren		1847
DeBonald, C. S.,	Berthier en haut, Q	1862
DeBoucherville, Charles B.,	Quebec	1843
DeCow, D. McG ,	Montreal	1886
DeGrosbois, T. B.,	Roxton Falls, Q	1868
Demorest, B. G. G.,	Stirling, O	1852
Derby, W. J.,	Rockland, O	1882
*Desaulniers, Antoine A.,		1863
*Decelles, Charles D.,		1841
Dibblee, G. O.,	Moor's Mills, N B	1880
* Dice, George,		1864
* Dick, James R.,		1842
* Dickinson, James S.,		1846
* Dickinson, George,		1868
Dickson, William W.,	Pembroke, O	1863
Digby, F. Winniett,	Brantford, O	1863
* Dodd, John,		1864
Doherty, W. W.,	Kingston, N B	1885
Donnelly, C. H.,	Waresville, Texas	1860
* Dorion, Severe		1843
* Dorland, Enoch G.		1850
Dorland, James,	Milwaukee, Wis	1875
Dougan, Wm.,	St Catharines, O	1867
Douglass, James [Hon]		1847
Dowling, John F.,	Egansville, O	1875
Drake, Joseph M.,	Abbottsford, Q	1861
Dubuc, Charlemagne,	Montreal	1864
		1853
* Ducket, Stephen,		
Duckett, William A.,	Montreal	1859
Dufort, Thadee A.,	St Sebastjen, Q	1865
Duhamel, Louis	Hull, Q	1860
Duncan, George,	Fareham, Hants, Eng	1866
Duncan, Gedeon M.,	Bathurst, N B	1871
Duncan, George C.,	London, Eng	1875
Duncan, James S.,	Surg. Maj. Army	1858
		1871
* Duncan, John,		
Duncan, John A.,	Moose Jaw, N W T	1884
Duncan, W. T.,	Fergus Falls, Minn	1882
Dunlop, H. A.,	Crookston, Minn	1882
* Dunn, William Oscar,		1843
Dunsmore, John M.,	Stratford, O	1870
Dupuis, Joseph B.,	Clarenceville, Q	1856
Easton, John,	Brockville, O	1852
Eberle, Harry A.,	Kansas City, Mo	1876
Eberts, D. W.,	Winnipeg	1885
Edwards, Eliphalet G.,	London, O	1855
Edwards, J. S.,	London, O	1880
Edwards, Oliver C.,	Qu'Appelle, N.W.T	1873
Elder, John, B. A.,	Huntingdon, Q	1885
Elderkin, Edwin J.,	Avondale, Hants Co., N S	1884
Elkinton, A. G., Surg. Maj	Gren. Guards	1862
Ellison, S. R.,	268 W 43rd St N Y	1873
Emery, Gordon J.,	Minneapolis, Minn	1857
		1858
*English, T. F.,		
*Erskine, John,		1860
Ethier, Calixte,	St. Eugene, Q	1867
Evans, Griffith,	Vet. Dept. Army Woolwich, Eng	1864
Ewing, Wm.,	Hawkesbury, O	1873
Falkner, Alex.,	Lancaster, O	1866
Falls, Samuel K.,	Chicago	1875
Farewell, G. McGill,	Princeton, O	1872
Farewell, W. G.,	Oshawa, O	1868
Farley, James T.,	Fremont Centre, Mich	1877
Farley, John J.,	Belleville, O	1873
Faulkner, George W.,	Stirling, O	1871
Faulkner, D. W.,	Foxboro, O	1878
Feader, H. C.,	Chicago, Ill	1881
Feilde, E. C.,	Prescott, O	1881
Fenwick, Geo. E.,	Montreal	1847
Ferguson, Alex. R.,	Dalhousie Mills, O	1866
Ferguson, Wm. A., B.A.,		1884
Finlay, F. G.,	Montreal	1885
*Finlayson, John,		1834
Finnie, John T.,	Montreal	1869
*Fisher, John,		1847
*Fitzgerald, James,		1865
Fortier, Louis M ,	Huntingdon, Q	1873
*Forster, Stephen Sewell,		1846
Fraleigh, William S.,	Gananoque, O	1869
Fraser, H. D.,	Perth, O	1881
Fraser, Alex. C.,	Manitowoc, Wis	1877
*Fraser, William,		1836
Fraser, William H.,	Liverpool, N S	1867
Fraser, Donald M.,	Stratford, O	1869
Fraser, Donald,	Chicago, Ill	1868
Fraser, J. R.,	Metcalfe, O	1878
Freeman, C. M.,	Cape Sable Isl., N S	1871
Fuller, W.,	Grand Rapids, Mich	1866
Fuller, H. LeRoy, B.A.,	Sweetsburg, Q	1870
Fulton, James H.,	Montreal	1863
Gale, Hugh,	Bay City, Mich	1882
*Garvey, Joseph,		1852
Gardner, H. H.,	San Francisco, Cal	1878
Gardner, John J.,	Montreal	1883
Gardner, Matthew,	Sacramento, Cal	1871
Gardner, Wm.,	Montreal	1867
Gairdner, T. M.,	Bayfield, O	1886
*Gascoigne, Geo. E.,		1861
Gaviller, Edwin A.,	Hamilton, O	1873
*Gauvreau, Elzear,		1855
*Gauvreau, Lewis H.,		1836
Gendron, Thomas,	St. Raymond, Q	1866
Gernon, George W.,	Marieville, Q	1872
*Gibb, George D.,		1846
Gibson, John B.,	Cowansville, Q	1855
Gibson, W. B.,	Burlington, Vt	1878
*Gibson, Edward B.,		1864
Gibson, J. B.,	Cowansville, Q	1886
Gilbert, Henry L.,	Sherbrooke, Q	1875
Gillis, John A. F.,	Summerside, P E I	1877
Gillies, John,	Teeswater, O	1867
Gilmour, Angus A.,	Modesca, Cal	1868
*Giroux, Philippe,		1859
Girdwood, Gilbert P.,	Montreal	1869
Gladman, G. J.,	Lindsay, O	1886

Glen, C. W. E., Chambly, Q 1858
Godfrey, Robert, Montreal 1844
Godfrey, Abraham C., Freemantle, Southampton, Eng 1865
*Goodhue, P. J., 1875
Godforth, Franklin, Runcorn, Chester, Eng 1863
Gooding, Chs. E., St Philip, Barbadoes, W I 1884
Gordon, C. M., Aylwin, O 1881
Gordon, Robert, Arlington, Ill 1868
*Gordon, W. W., 1863
Graham, Charles E., Hull, Q 1865
Graham, George A., 1884
*Graham, Henry, 1863
Graham, Kenneth D., Ottawa 1875
Graham, J., Carp, O 1886
Grant, Donald J., Woodbridge, O 1863
Grant, James A., Ottawa 1854
Grant, Jas. A., jun., B.A., Ottawa 1882
Grant, Wm., Perth, O 1867
Grant, J. H. Y., Ottawa 1886
Gray, John S., Winnipeg, Man 1876
Gray, Thomas, Paisley, O 1879
Gray, James, 1883
Gray, W. L., Pembroke, O 1881
Greaves, Henry C., Barbadoes 1877
Greenwood, F. S., St. Catharines, O 1878
Greer, T. A., C.SS. Minia, Halifax, N S 1876
*Grenier, L. P. A., 1863
Groves, George H., Carp, O 1879
Groves, W., Carp, O 2886
Guerin, James J. E., Montreal 1878
Guest, Thomas F., St. Mary's, O 1873
Gunn, James, Durham, Grey Co. O 1861
Gurd, David F., Montreal 1879
Gustin, Smith, Bay City, Mich 1885
Gustin, Wm. Claud, Detroit, Mich 1863
Hagarty, Dad. M. J., Portage la Prairie Manitoba 1866
*Hall, Archibald (ad eun) 1848
*Hall, James B., 1866
*Hall, J. W., 1848
Hallett, E. O., Truro, N S 1885
Halliday, James T., Peterboro, O 1865
*Hamilton, Andrew W., 1859
Hamilton, Charles S., Demorestville, O 1868
Hamilton, John R., Stratford, O 1871
*Hamilton, Rufus F., 1861
Hamel, Joseph A., Murray Bay, Q 1856
Hammond, J. H., Montreal 1869
Hanna, A. E., Harlem, O 1885
Hanna, Franklin, Lansdowne, O 1879
Hanover, William, Seaforth, O 1875
Hanvey, C. J. B., Yale, B C 1863
Harkin, F. McD., Vankleek Hill, O 1885
Hart, F. W., St. Martinville, La 1835
Harvie, J. B., 585 1st St. Troy, N Y 1881
Harvey, William A., Harriston, O 1874
*Harding, F. W., 1868
Harkin, Henry, Liverpool, Eng 1867
*Harkin, William, 1858
Hardness, John, Dickinson's Corners, O 1862
Harkness, Andrew, New Lancaster, O 1869
Harrison, David H., Manitoba 1864
Harrison, H. J., Moulinette, O 1883
Hart, George C., Prescott, O 1879
Hannington, E. B. C., Yale, B C 1875
Hawkins, A. C., Halifax, N S 1885
Hayes, James, Simcoe, O 1866
Haythorne, T. J., B.A., Charlottetown, P E I 1886
Heard, C. DeW., Keelby, Eng 1880
Hebert, P. Zotique, Whitehall, N Y 1873
†Henderson, Alex. A., Ottawa 1870
*Henderson, E. G., 1874
*Henderson, Peter, A. M., 1848
Henderson, Andrew, Calgary, N W T 1880
*Henry Walter [Hon.] 1853
*Henry, Walter J., 1856
Henry, Wm. G., Detroit, Mich 1883
Henwood, Alfred J., Brantford, O 1879
*Hervey Jonas J., 1866
Hetherington, Harry, Hatley, Q 1872
Heyd, H E., Buffalo, N Y 1881
Hickey, Charles E., Morrisburg, O 1866
Hickey, Samuel A., B.A., Aultsville, O 1874
Higginson, H. A., Winnipeg, Man 1881
Hills, Joseph, Woonsocket, R I 1873
Hingston, W. H., Montreal 1851
Hockridge, Thos. G., London, Eng 1874
*Holden, Rufus, 1844
Holwell, John, Kingston, Jamaica 1868
*Holmes, Andrew F. (ad eun), 1843
Hopkins, Alfred J., Cookshire, Q 1883
Houston, D. W., Cohoes, N Y 1881
Howard, James, Lachine, Q 1867
Howard, Robert, St. Johns, Q 1872
Howard, R. Palmer, LL.D. (Hon), Montreal 1848
†Howard, R. J. B., B.A., Montreal 1862
Howden, Robert T., Winnipeg, Man 1857
Howley, W. H., Detroit, Mich 1878
Howitt, Wm H., Toronto, O 1870
Howland, Francis L., Huntsville, O 1867
Hughes, P. H., Strathroy, O 1886
Hurlbert E. Augustus, Brooklyn, N Y 1860
Hume, William L., Leeds, Q 1875
*Hunt, J., 1881
Hunt, Henry, Williamstown, O 1876
Hunt, J. H., Surg. Maj. Army Med Dep 1869
Hunt, Lewis G., B.A., Sheffield, Eng 1871
†Hurd, Ed. P., Newburyport, Mass 1865
Hurdman, Benj. F. W, Inverness, Q 1882
Hurdman, H. T., Aylmer, Q 1885
Hurlburt, George W., Thornbury, Q 1859
Hurlburt, Richard W., Mitchell, O 1873
Hutchinson, John A., Brussels, O 1878
Hutchison. James A., Montreal 1884
Imrie, A. W., Detroit, Mich 1879
Inkselter, D. G., Costa Rica 1880
Irvine, James C., Liverpool, Eng 1866
Irvine, R. T., Carp, O 1885
Irwin, J. L., 205 E Ohio St., Chicago 1879
Ives, Eli, Coaticooke, Q 1863
*Jackson, A. T., 1846
Jackson, Wm. Fred., Brockville, O 1873
Jackson, Joseph A., Manchester, N H 1879
*Jamieson, Alex , B.A., 1877
Jamieson, Thomas A., 1875
Jamieson, Chas. J., Winnipeg, Man 1879
Johnson, C. H., Austin, Minn 1884
Johnson, H. D., Charlottetown, P E I 1885
Johnson, James B., London, Eng 1876
Johnson, J. C., Surg. Maj. Army 1867
Johnson, J. R., Spring Valley, Minn 1883
Johnston, Thomas G., Sarnia, O 1871
Johnston, W. G., Montreal 1884
Jones. Charles R., Hatley, Q 1874
Jones, George N., Burlington, Iowa 1874
*Jones, Thomas W., (ad eun) 1854
*Jones, Jonathan C., 1865
Jones, Wm. Justus, Prescott, O 1856
Jones, A. J. M., Wabash Av., Chicago 1873
Josephs, G. E., Pembroke, O 1881
Kearney, W. J., Mariposa, Cal 1875

Keefer, Wm. N., B.A., Surg. Maj. Bengal Army 1869
1859
*Keeler, Thomas, Louisville, Ky 1867
†Kelly, Clinton Wayne, Rochester, Minn 1884
Kelly, Patrick N., 1846
*Kelly, Wm., Durham, O 1873
†Kelly, Thos., Lindsay, O 1864
Kempt, William, Montreal 1864
Kennedy, Richard A., Cumming'sBrid.,O 1886
Kennedy, R. A., B.A., 1858
*Kerr, James Surg. Maj. Army 1862
Killery, St John, St. Sylvestre, Q 1859
King, Wm. M. H., Compton, Q 1868
King, Reginald, A.D., Peterboro, O 1867
King, Richard, Montreal 1886
Kinloch, J. A., 1856
*Kirkpatrick, A., Montreal 1886
Kirkpatrick, R. C., B.A., Windsor 1873
Kittson, Edmund G., 1869
*Kittson, John G., Bryson, Q 1882
Klock, Robert H., Aylmer, Q 1885
Klock, W. H., 1866
*Knowles, James A., 1856
*Kollmyer, Alex. H., St. Philomene, Q 1856
Laberge, Ed., C. P. R'y., O 1884
Landor, Thomas H., 1877
Lane, John A., Kalamazoo, Mich 1876
Lang, C. L., New Richland, Minn 1881
Lang, W. A., 1866
*Lang, Thomas D., Amherstburg, O 1875
Langlois, O. X., 1875
*Langrell, Richard T., Montreal 1847
Larocque, A. B., Halifax, N S 1883
Lathern, J. S., Deer Lodge, Mon 1881
Laurin, Edgar J., Bond Head, O 1863
Law, D. W. C., Coleraine, Irel 1877
Law, William K., London, Eng 1879
†Lawford, John B., 1862
*Lawrence, Henry J. H., Melbourne, Q 1866
Leavitt, Julius, Montreal 1851
Leclere, George, Lancaster, O 1861
Leclair, Napoleon, 1858
Lee, James C., 1849
*Lee, John Rolph, Granville, B C 1879
Lefebvre, John M., Salaberry de Valleyfield, Q 1866
Legault, D., St. Pierre, Isle d'Orleans 1850
Lemoine, C., 1848
Lepailleur, Leonard, Montreal 1843
Leprohon, John L., New York, U S 1870
Levi, Reuben, St. Johns, Q 1861
Lindsay, Heriot, 1862
*Lister, James, 1879
*Lloyd, H. W., 1872
*Locke, C. F. A., 1842
*Logan, David D., Iona, Mich 1880
Logan, Robert, 1833
*Logan, William, 1844
*Long, Alexander, 1866
Longley, Edmund, Quebec 1848
Longpre, Pierre F., 1883
Loring, J. Brown, 1850
*Loupret, Andre, Russell, O 1870
Loux, William, 1855
*Loverin, Nelson, Ayr, O 1876
Lovett, William, 1869
*Lucas, T. D'Arcy, Campbellton, N B 1881
Lunam, H., B.A., Surg. Maj. Army 1862
Lundy, E. L., Minneapolis, Minn 1879
Lyford, Chas. C., Shawville, Q 1861
Lyon, Arthur, Chicago. Ill 1880
Maas, Rudolph J., 1847
*MacDiarmid, John D., St. Paul, Minn 1836
MacDonald, Angus,
1853
*MacDonald, Colin, Sutton, Q 1881
MacDonald, R. T. E.,
MacDonald, Roderick Æneas, Stoney Mountain, Man 1874
Ottawa 1849
MacDonell, Æneas, Montreal 1876
MacDonnell, R. L., B.A., Almonte, O 1869
MacFarlane, Wm., Fort Covington, N Y 1869
Macfie, James, Rapid City, NWT 1863
MacIntosh, Robert, Amherstburg, O 1866
Mack, Francis Lewis, 1865
*Mackie, J. R., 1859
*Macklem, Samuel S., Sarnia, O 1867
Maclean, Archibald. I870
*Macnabb, Francis A. M., Kensington, P E I 1883
Macneil, Alex., Chicago, Ill 1867
McArthur, Robert D., Port Elgin, O 1879
McArthur, John A., Winnipeg 1885
McArthur, J., Martintown, O 1874
McBain, John, Montreal 1850
McCallum, Duncan C., Hopkinton, Mass 1878
McCann, J. J., B.A., Chicago, Ill 1867
McCarthy, W., Montreal 1884
McClure, W., B.A., Duart, O 1886
McCollum, E. P., 1872
* McConkey, T. C., Montreal 1873
McConnell, John B., 1864
* McCord, John D., East Farnham, Q 1882
McCorkill, R. K. C., Pembroke, O 1885
McCormack, N., Richmond, Q 1874
McCormick, Andrew G., Lucknow, O 1869
McCrimmon, Donald A., Kincardine, O 1878
McCrimmon, John, Palermo, O 1878
McCrimmon, Milton, San Francisco, Cal 1886
McCuaig, W. J., St. Mary's, O 1879
McCullough, George, 1843
* McCullough, Michael, [Hon.] Baie Verte, N B 1879
McCully, Oscar J. M. A., Chatham, N B 1866
McCurdy, John, Dunvagan, O 1875
McDermid, Wm. E., Athol, O 1867
McDiarmid, Donald, Hensall, O 1873
McDiarmid, James, Paisley, O 1883
McDonald, Alex., Alexandria, O
McDonald, H. J., Montreal 1880
† McDonald, John A., Acton Vale, Q 1873
McDonald, Jos. D. A., Spencer, Iowa 1880
McDonald, R. C., 1834
*McDonald, Roderick, Boyd, Wis 1882
McDonald, Alex. R., Alexandria, O 1874
McDonnell, Alex. R., Montreal 1852
McDonnell, Angus C., Ottawa, O 1864
McDougall, Peter A., 1847
* McDougall, Peter A., Winnipeg, Man 1880
McEachran, W., Carlton Place, O 1870
McEwan, Findlay, Brockville, O 1885
McGannon, E. A., Lowell, Mass 1881
McGannon, M. C., Prescott, O 1886
McGannon, T. G., Drummondville, Q 1857
McGarry, James, Iona, O 1867
McGeachy, William, 1848
*McGill, William, 1861
* McGillivray, Donald, Beebe Plain, Q 1867
McGowan, Henry W., 1849
McGrath, Thomas, 1861
*McGregor, Duncan, London, O 1879
McGuigan, W. J., 1873
* McGuire, Bernard D., Clayton, N Y 1876
McIlmoyl, Henry A., Kingston, N B 1884
McInerney, James P., Victoria, O 1865
McInnes, Walter J., Vankleek Hill, O 1859
McIntyre, James, Vankleek Hill, O 1870
McIntosh, Donald J., Souris, P E I 1867
McIntyre, Peter A.,

McKelcan, George Lloyd, Hamilton, O 1860
McKenzie, J. T., Plainfield, O 1884
McKenzie, B. E., B.A., Kingston Road, Toronto, O 1880
McKenzie, K. A. J., Portland, Oregon 1881
McKay, John, Woodville, O 1869
McKay, Walter, Courtland, O 1854
McKay, J. M., Wallace, N S 1886
McKinley, John K., Bristol, Q 1878
McLaren, Peter, Brudenell, P E I 1869
McLaren, Peter, Paisley, O 1861
McLaren, Peter, Ormstown, Q 1872
McLaren, D. C., B.A., Galt, O 1880
* McLean, Alexander, 1860
McLean, J. W., Point Hastings, N S 1883
McLean, Thos. N., Fergus Falls, Minn 1882
McLean, J. M., B.A., Pictou, N S 1884
McLellan, Jas. H., Tignish, P E I 1884
* McLeod, Arch., B.A., 1883
McLeod, James, Charlottetown, P E I 1873
McMeekin, J. W., Otter Lake, Mich 1885
McMicking, George, Goderich, O 1851
McMillan, Æneas J., Manitou, Col 1874
McMillan, D. L., Alexandria, O 1885
McMillan, Louis J. A., Mansonville, Q 1860
McMillan, John, Pictou, N S 1857
McMurray, Samuel, 1841
*McNaughton, E. P., 1836
McNee, Stewart, Rosemount, O 1879
McNeece, James, Montreal 1869
McNeil, Ernest, Vermont River, P E I 1870
McNulty, M., Brashers Falls, N Y 1880
McQuillen, James, Marquette, Mich 1874
* McRae, George, 1876
McTaggart, Alexander, London, O 1860
* McVean, John M., 1865
Madill, John, Alliston, O 1867
Maher, J. J. E., Yew York 1883
Major, George W., B.A., Montreal 1871
Malcolm, John Rolph, Scotland, O 1861
* Malhiot, Alfred, 1846
Malloch, Edward C., Ottawa, O 1863
* Malloch, William B., 1867
Mallory, Albert E., Warkworth, O 1872
Marceau, Louis T., Napierville, Q 1872
Markell, Richard S., Cloverdale, Cal 1867
* Marr, Israel P., 1849
Marr, Walter H., W 33rd St. N. York 1859
Marston, Alonzo W., Hull, Q 1871
Marston, John J., U. S. Army 1863
Martel, Ovide, Montreal 1883
Mason, J. L., M.A., Brailsford, Derby, Eng. 1863
Mattice, Rich. J., Omaha, U S 1875
† Mathieson, John H, St. Mary's, O 1871
* Mathieson, Neil, 1870
Mayrand, William, St. Andrews, Q 1847
Meahan, J. C., Bathurst, N B 1884
Meane, John, Staff Srg. Maj. Army 1869
Meek, Jas. A., 20 W. 25th St. New York 1875
* Meigs, Malcolm R., 1865
Menzies, John B., Ft. Gratiot, Mich 1879
* Meredith, Thomas L. B., 1842
Merritt, D. P., B.A., Fitzroy Harbor, O 1884
Metcalfe, Henry J., Thurso, Q 1876
Mewburn, F. H., Galt Mines, N W T 1881
Mignault, Henri A., St. Denis, Q 1860
Mignault, L. D., B.A., Montreal 1880
Miller, R., Surg. N. W. Mounted Police, Battleford, N W T 1870
Mills, Thos. W., M.A., Montreal 1878
Miner, Frank L., Abercorn, Q 1877

*Mines, William W., 1874
Mitchell, Fred. H., London, O 1878
Moffatt, John Edw., Staff Surg. Army 1861
Moffat, Walter, Pensacola, Fla 1852
Molson, Wm. A., Montreal 1874
Mongenais, Napoleon, Rigaud, Q 1865
Monk, George H., Dillonton, Q 1875
Moore, Charles S., London, O 1874
Moore, Jehiel T., Tilsonburg, O 1874
Moore, Joseph, 1852
Moore, Richard, 1853
Moore, Robert C., St. Paul, Minn 1869
Moore, William, Algonac, Mich 1881
*Morin, Jos. [Hon.], 1859
*Morrison, David R., 1869
Morrison, John, M.A., Waddington, N Y 1872
Mount, John W., Montreal 1851
Munro, Alexander, Montreal 1876
Munro, James T., Dominionville, O 1872
Muckey, F. S., St Paul, Minn 1883
*Murray, Charles H., B.A., 1876
Murray, D., Plainfield, N S 1886
Musgrove, W. J., W. Winchester, O 1882
Neilson, W. J., Winnipeg, Man 1878
Nelles, J. M., Canton, Ill 1875
Nelles, John A., London, O 1850
*Nelson, Horace, 1851
*Nelson, Wolfred (Hon). 1848
Nelson, Wolfred D. E., Panama, C A 1872
Nelson, W. M. F., Montreal 1884
Nesbitt, Jas. A., Salt Lake City, Utah 1868
Nicol, Wm. R., Watkins, N Y 1872
*Nicholls, Chs. R., 1862
Norton, Thos., Horning's Mills, O 1874
Oakley, Wm. D., Streetsville, O 1877
O'Brien, Thos. B. P., Srg. Maj. Army 1862
O'Brien, Robert S., Nanaimo, B C 1873
O'Brien, David, Renfrew, O 1873
O'Brien, T. J. P., Kansas City, Mo 1882
O'Brien, Timothy, Brudenell, O 1884
O'Callaghan, Cornelius H., 1854
O'Callaghan, T. A., B.A., Worcester, Mass 1880
*O'Garr, Peter, 1857
*O'Connor, Daniel A., 1867
O'Dea, James J., Stapleton, Staten Island, N Y 1856
Odell, William, 1849
O'Keefe, Henry, Minto, Dak 1882
Ogden, H. T., B.A., Milwaukee, Wis 1882
O'Leary, James, St. Pascal, Q 1866
O'Leary, Patrick, Mayo, Q 1859
Oliver, James W., Clifton, O 1868
O'Reilly, Charles, Toronto, O 1867
Orton, T. H., Hamilton, O 1886
Osborne, A. B., Hamilton, O 1886
Osler, Wm., 131 S 15th St, Philadelphia 1872
Palmer, G. F., Ottawa 1885
*Padfield, Charles W., 1868
Painchaud, Edw. S. L., Varennes, Q 1848
Pallen, Montrose A., New York 1864
Palmer, Loran L., Toronto 1866
*Paquin, Jean M., 1843
*Paradis, Henri, 1846
*Paradis, Pierre E., 1867
*Park, George A., 1877
Parke, Charles S., 1866
Parker, Rufus S., Canton, Mass 1866
*Patterson, James M., 1855
Paterson, James, Winnipeg, Man 1864
*Pattee, George, 1858
Pattee, Richard P., Plantagenet, O 1874

*Patton, Edward K., 1867
Pegg, Austin J., Ossian, Iowa 1872
Pegg, Charles H., Chicago, Ill 1867
Perks, W. C., Woodstock, O 1881
Perrault, Victor, St. Eustache, Q 1852
Perrier, John, Cleveland, Ohio 1868
Perrigo, James, M.A., Montreal 1879
Perry, H. R., Coteau Landing, Q 1873
Phelan, C. J. R., Waterloo, Q 1865
Phelan, James B., Chicago, Ill 1874
*Phelan, Joseph P., 1854
Philip, David L., Brantford, O 1863
Phippen, S. S. C., Owosso, Mich 1883
*Picault, Charles, 1857
Pickup, John W., Brockville, O 1867
Pinsonneault, B., Chicago, Ill 1880
*Pinet, Alexis, 1840
Pinet, Alex. R., St. Laurent, Q 1864
Pomeroy, L. E. Mc., B.A., Tweed, O 1886
Poole, Alfred, Montreal 1886
Poole, H. E., Rossie, N Y 1880
Porteous, Wm., Montreal 1884
Poussette, A. Courthorpe, Sarnia, O 1860
Powell, F. H., Ottawa 1885
Powell, Israel Wood, Victoria, B C 1860
Powell, Newton W., Cobourg, O 1850
†Powell, Robert H. W., Ottawa 1876
Powers, Geo. W., Eaton Corners, Q 1861
Powers, Lafontaine B., Port Hope, O 1867
Pringle, George, Cornwall, O 1855
Pringle, A. F., Northfield, Minn 1880
Pringle, W. R., Cornwall, O 1886
Prosser, W. O., Le Mars, Ply Co., Iowa 1874
Proudfoot, John S., Suspension Bridge, O 1868
Proudfoot, Alex., Montreal 1869
Proulx, Phileas, Montreal 1844
*Prevost, E. Gilbert, 1859
Pulford, F. W., Stonewall, Man 1880
*Quarry, James J., 1868
*Quesnel, Jules M., 1849
Rae, J. Hamilton (Hon.), London, Eng 1853
*Rainville, Pierre, 1863
Rambault, J., Dep. Insp. Gen. Army 1859
*Rattray, Charles J., 1871
Rattray, James C., Cobden, O 1874
Raymond, Olivier, Montreal 1850
Raymond, Alf., Moulinette, Q 1886
Raymond, G. H., B.A., Springfield, NB 1886
Read, Herbert H., Halifax, N S 1861
Redner, Horace P., Lonsdale, O 1864
Reddick, Robert, West Winchester, O 1874
Reddy, Herbert A., B.A., Montreal 1876
*Reddy, John (ad eun) 1856
Reed, Thomas D., Montreal 1871
Reed, John A., Sault Ste. Marie, O 1871
Reid, Alex. Peter, Halifax, N S 1858
*Reid, Kenneth, 1864
Renner, W. Scott, Jordan Station, O 1884
Reynolds, T. W., Hamilton, O 1881
Reynolds, Robert T., Berlin, O 1837
*Reynolds, Thomas, 1842
Richard, Marcel, Manchester, N H 1864
Richmond, P. E., Mt. Pleasant, Minn 1873
Ridley, Henry Thomas. Hamilton, O 1852
*Rielle, Etienne R. E., 1857
Riley, Oscar H., Moer's Forks, Clinton Co., N Y 1879
Quebec 1868
Rinfret, Ferdinand R., 1854
*Rintoul, David M., Archer av., Chicago 1865
Richardson, J. R., Toronto, O 1880
Riordan, B. L., Duluth, Minn 1876
Ritchie, A. F., B.A.,
Ritchie, John L., Army Med. Dept 1874
*Roberts, Edward T., 1859
Roberts, John E., B.A., Montague, Jam., W I 1867
1885
Robertson, A. M., Montague, P E I 1865
Robertson, James E., Milton, Q 1864
Robertson, David, Lennoxville, Q 1857
Robertson, David T., St. Andrews, O 1867
Robertson, Patrick, Lennoxville, Q 1886
Robertson, F. D., B.A., Ottawa 1860
Robillard, Adolphe, Brantford, O 1867
Robinson, Stephen J., Markham, O 1877
Robinson, Wesley, New Carlisle, Q 1866
Robitaille, Louis, Quebec 1858
Robitaille, L. T., Montreal 1868
†Roddick, Thomas G., Montreal 1869
Rodger, Thomas A., Denver, Col 1881
Rogers, E. J. A.. Ottawa 1874
Rogers, Amos, Auburn, Placer Co., Cal 1870
Rooney, R. F., Montreal 1866
†Ross, George, M.A., Dundas, O 1881
†Ross, James, B.A., Montreal 1880
Ross, G. T., Detroit, Mich 1884
Ross, L. D., Kansas City, U S 1883
Ross, W. K., 1863
Ross, Thomas, 1872
*Ross, Henry, Ashburt, New Z 1871
Ross, William G., 1875
*Ross, Wm. D., Cohoes, N Y 1881
Ross, J. W., Montreal 1886
Ross, L. F., B.A., Manotick, O 1886
Rowatt, W. M., Montreal 1884
Rowell, G. B., Perth, O 1865
Rugg, Henry C., 1859
*Rumsey, William, Fergus Falls, Minn 1879
Rutherford, M. C., Chicago 1882
Rutherford, Clarendon, M.A., Manitoba 1883
Rutledge, And. J., Napanee, O 1852
Ruttan, Allen, New York 1880
Ruttan, A. M., Montreal 1884
Ruttan, R. F., 1849
*Sabourin, Moise, 1847
Sampson, James (Hon.) Toronto, O 1850
Sanderson, George W., Thistletown, O 1854
Savage, Thos. Y., 1866
*Savage, Alex. C., 1863
*Sawyer, James H., 1847
*Schmidt, Samuel B., Montreal 1886
Schmidt, A. F., Faribault, Minn 1886
Schmidt, A. J., 1854
*Schofield, David T., Hazeldean, Co. Carlt., O 1879
Scott, John G., 1854
Scott, Stephen A., 1844
*Scott, William E., Hull, Q 1875
Scott, Wm. F., Winnipeg, Man 1883
Scott, W. McE., 1846
*Scriven, George Augustus, Brigden, O 1870
Seager, Francis R., Bright, O 1876
Secord, Levi, Fredericton, N B 1886
Seery, F. J., Heuvelton, N Y 1878
Setree, Edward W., Rigaud, Q 1848
Seguin, Andre, St. Paul, Minn 1863
Senkler, A. E., Selina, Frisco Co., Cal 1883
Serviss, T. W., Winnipeg, Man 1879
Seymour, M. M., 1841
*Sewell, Stephen C. (ad eun) Quebec 1869
Sewell, Colin (ad eun), Howick, Q 1881
Shanks, J. C., Maysville, N B 1885
Sharp, J. C., South Toledo, Ohio 1872
Sharp, Wm., Watertown, Dak 1882
Shaw, Alexander, Bracebridge, O 1879
Shaw, W. F.,

Shaver, Peter Rolph, Stratford, O 1854
Shaver, W. H., Wales, O 1883
*Shaver, R. N., 1857
Shibley, J. L., B.A., Yarker, O 1858
Shepherd, Francis J., Montreal 1873
Sherk, George, Cheapside, O 1865
Shoebottom, Henry, Port Huron, Mich 1857
Shufelt, W. A., 250 W 11th St, N York 1881
Sihler, G. A., Simcoe, O 1883
*Simard, Amable, 1852
Simpson, Thomas, Montreal 1854
Sinclair, Coll., Aylmer, O 1874
Small, H. B., Ottawa 1880
*Smallwood, John R., 1868
Smellie, T. S. J., M.A., Pr. Arthur's Landing 1877
Smiley, J. S., Portsmouth, Iowa 1880
*Smith, Daniel D., 1868
Smith, Daniel F., Walkerton, O 1878
Smith, E. H., 2700 Wentworth Ave, Chicago 1785
Smith, E. H., Fullarton, Neb 1881
*Smith, Edward W., 1859
Smith, John, Portland, Oregon 1879
Smith, Norman A., Frelighsburg, Q 1870
Smith, Wm., Lachute, Q 1876
Smith, Edward W., A.B., West Meriden Conn 1882
Smith, W. A. de W., Montreal 1884
Smyth, H. E., Marlborough, Mass 1885
Smythe, T. W., Colonel 100th Regt., Dover, Eng 1848
Snider, Frederick S., Teeterville, O 1876
Sparham, Terence, Brockville, O 1841
Sparham, E. R., 1852
Spear, Andrew M., Danville, Q 1874
Spencer, R., Brandon, Man 1879
*Squire, Wm. Wood, M.A., 1864
Stafford, Fred. J., Little Bay, Nfld 1878
Stanton, George, Simcoe, O 1868
Stark, George A., Milwaukee, Wis 1872
*Staunton, Andrew, 1846
Stephen, Wm., Rosario, Argentine Rep 1881
Stevens, Alex. D., Dunham, Q 1857
Stevenson, Charles N., Coaticook, Q 1876
Stevenson, Hans, Wakefield, Q 1880
Stevenson, J. M., Bryanston, O 1856
*Stevenson, John L., 1855
*Stevenson, John A., 1873
Stevenson, Robert A., Strathroy, O 1871
Stewart, Alexander, Palmerston, O 1872
Stewart, Andrew, 1884
*Stewart, John Alexander, 1862
Stewart, James, Montreal 1869
Stewart, J. O., 1880
Stephenson, James, Iroquois, O 1850
Stimpson, Alfred O., Thompson, Pa 1868
St. John, Leonard, Chicago, Ill 1872
Storrs, A., Mexborough, York, Eng 1876
*Strobridge, James Gordon, 1862
Struthers, A. D., Frelighsburg, Q 1881
Struthers, B. R., Rochester, Minn 1883
Stroud, C. S., Norway, Benton Co., Iowa 1876
*Sutherland, Fred. Dunbar, 1864
Sutherland, Walter, Ormstown, Q 1871
*Sutherland, Wm., 1836
*Sutherland, Wm., 1870
Sutherland, Wm. Dunbar, Montreal 1879
Switzer, Egerton R., Salina, Ks 1865
Tabb, Silas E., M.A., Sherbrooke, Q 1868
*Tait, Henry Thomas, 1860
Taylor, Wm. H., Peterboro, O 1859
Taylor, Sullivan A., Gilmonton, N H 1870
Tew, H. S., Wakefield, York, Eng 1864
Temple, James A., Toronto 1865
Thayer, Linus O., Montreal 1859
*Theriault, F. D., 1863
Therrien, Honore, Bedford, Q 1863
Thomas, W. R., Elkhart, Man 1886
*Thompson, James, 1842
Thompson, Robert, Brantford, O 1852
Thompson, Wm. A., New Richmond, Q 1882
Thornton, Hastwell W., B.A., New Richmond, Q 1882
Tracey, A. W., West Meriden, Conn 1873
Trenholme, Edward Henry, Montreal 1862
*Trudel, Eugene H., 1844
Trueman, J. E., Macan, N S 1881
*Turgeon, Louis G., 1860
Turnbull, R., Fort McLeod, N W T 1886
Tuzo, Henry A., 1853
†Tunstall, Simon J., B.A., Litton, B C 1875
Usher, Henry, Walkerton. O 1861
Vannorman, J. M., Detroit, Mich 1850
*Vercoe, Henry L., 1865
*Vicat, John R., 1867
†Vineberg, Hiram N., New York 1878
Wagner, A. Dixon, Cornwall, O 1872
Wagner, G. C., Dickinson's Landing, O 1881
*Wagner, Wm. H., 1844
Wakeman, William, Quebec 1866
Wales, Benjamin N Robinson, Q 1874
*Walker, Robert, 1851
Walker, Felix D., Launching, P E I 1884
Wallace, Isaac U., Milton, Q 1874
Walsh, Edmond C., Madrid, N Y 1866
Walton, George O., Barbadoes, W I 1873
Wanless, John R., Dunedin, New Z 1867
Ward, William T., Morristown, Minn 1873
Ward, Michael O'B., Montreal 1875
Warren, Frank, Brooklin, O 1872
*Warren, Henry, 1860
Waugh, William, London, O 1872
Weagant, C. A., Yarker, O 1879
*Webb, James T. S., Montreal 1871
Webster, Arthur D., Edinburgh, S 1878
Weilbrenner, Remi, Port Neuf, Q 1851
*Weir, Richard, 1852
*Wherry, John, 1862
White, F. J., Greenspound, Nfld 1886
White, W. W., M.A., St. Johns, N B 1886
Whitecomb, Josiah G., Omaha 1848
Whiteford, James W., Winnipeg, Man. 1873
Whiteford, Richard, Toledo, Ohio 1857
Whitwell, W. P. O., Philipsburg, Q 1860
*Whyte, Joseph A., 1870
Wigle, Hiram, Wiarton, O 1875
*Widmer, Christopher [Hon] 1847
*Wilcox, Marshall B., 1868
Wilkins, George (ad eun), Montreal 1886
Williams, J., Boston, Mass 1881
Williams, J. F., Barrie, O 1886
Williston, H. V., M.A., Newcastle, NB 1879
Willson, J. A. K., Manotick 1885
Wilson, Benjamin S., Belleville, O 1866
*Wilson, Robert M., 1850
Wilson, William, Ottawa 1857
Wilson, Samuel F., Millstream, Kings Co., N.B 1884
Wilson, C. W., Cumberland, O 1886
*Wilscam, John Wilbrod, 1846
Wishart, D. G., Madoc, O 1885
Woolverton, Algernon, M.A., Hamilton, O 1868
Woods, David, Staff Surgeon Army 1860

†Wood, Edwin Geo., Londsboro, O 1885
Wood, George C., 1845
Wood, George, Faribault, Minn 1863
Wood, Ed. S., Faribault, Minn 1883
Wood, Hannibal W., Knowlton, Q 1865
Woods, Jno. J. E., Aylmer, Q 1875
Woodful, Sam. Pratt., Surg. Maj 1864
Woolway, C. J. Copper Falls, Mich 1875
*Workman, Benjamin, 1853
Workman, Joseph, Toronto 1835
Worthington, A. N., Montreal 1886

Worthington, Edward [ad eun] Sherbrooke, Q 1868
Wright, John W., B.A., Picton, O 1878
Wright, Henry P., Ottawa 1872
Wright, Stephen, Ottawa, O 1859
Wright, William, Montreal 1848
Wye, John H., 26 Farrington sq, London 1868
Young, Philip R., Clarenceville, Q 1876
Young, Robert C., Ridgetown, O 1873
Youker, William, Belleville, O 1870

*Deceased. †Medallist.

MASTERS OF ARTS.

(For Addresses, see Lists of Bachelors of Arts and of Applied Science.)

Allworth, Rev. John, B.A. 1875
Amaron, Rev. Calvin E., B.A. 1880
Ami, Henry Mark, B.A. 1885
Archibald, John S., B.A 1877
*Bancroft, Rev. Charles (ad eun) 1856
Bancroft, Rev. C., B.A 1870
Baynes, Donald, B.A 1867
Bethune, Meredith Blenkarne, B.A. 1869
*Bothwell, John A., B.A. 1868
Bowman, Wm. M., (Hon) 1859
Boyd, John, B.A. 1864
*Butler, Rev. John, (Hon) 1852
Cameron, Rev. James, B.A. 1874
Carmichael, Rev. J. B., B.A. 1871
Chamberlin, Browne, B.C.L. (ad eun) 1857
Chandler, George H., B.A 1879
Chapman, Rev. Charles, M.A., London Univ. (ad eun) 1872
Clarke, Wallace, B.A., M.D. 1872
Clowe, John D., B.A. 1874
Cornish, Rev. George, B.A 1863
Craig, James A., B.A 1883
Crothers, Rev. Wm. J., B.A 1875
Cunningham, Rev. Thos. E., B.A. 1883
*Cushing, Lemuel, B.A., B.C.L. 1867
Dart, Wm. J., B.A 1874
Darey, J. Herbert, B.A. 1885
Davidson, Rev. James, B.A. 1866
Davidson Charles P., B.A., B.C.L. 1867
Davidson, Leonidas H., B.A. 1867
Dawson, Rankine, B.A., M.D. 1882
Dawson, Wm. B., B.A. 1879
Dey, Rev. William J., B.A. 1875
Dewey, Finlay McN., B.A 1882
DeWitt, Caleb J., B.A. 1864
Dickson, George, M.A., Victoria Col. (ad eun) 1879
Donald, James T., B.A 1882
Dougall, John Redpath, B.A. 1867
Duff, Rev. Archibald, B.A 1867
Duncan, Alexander E., B.A. 1875
Ells, Robert, B.A. 1875
*Empson, Rev. John, B.A 1879
Forneret, Rev. George A., B.A. 1880
*Gibb, George D., M.D. (Hon). 1856
Gibson, Thos. A (Hon) 1856
Gilman, Francis E., B.A. 1865
Gould, Edwin, B.A. 1860
Graham, John H. (Hon). 1859
Green, Joseph, B.A. 1864

*Haight, Fred. S., M.A., Williams Col (ad eun) 1881
Hall, Rev. Wm., B.A. 1867
Hart, Lewis A., B.A. 1869
*Hicks, Frank W., B.A. 1870
Hindley, Rev. John, B.A 1873
Howe, Henry Aspinwall (Hon). 1855
Jones, Montgomery, B.A 1873
Kahler, Frederick A., B.A. 1872
Keays, Chas. H., B.A. 1883
*Kemp, Rev. Alex. F. (Hon). 1863
Kennedy, George T., B.A. 1872
Kennedy, Rev. John, B.A. 1860
Kirby, James, B.A., B.C.L. 1862
Krans, Rev. Edward H., B.A. 1875
Laing, Rev. Robert, B.A. 1877
*Leach, Robert A., B.A., B.C.L. 1869
Lighthall, Wm. Douw., B.A., B.C.L. 1885
Lyman, A. Clarence, B.A 1881
Lyman, Henry H., B.A 1880
McCord, David R., B.A., B.C.L. 1867
McGregor, Rev. Duncan, B.A 1874
McGregor, James, B.A. 1868
*McIntosh, John, B.A. 1878
McLaren, John R., B.A 1868
McLennan, Rev. Duncan H., B.A. 1875
Markgraf, Charles F. A. (Hon) 1865
Mason, James L., B.A. 1868
Mattice, Corydon J., B.A. 1862
Morin, Joseph L., B.A. 1886
Morris, Alex., B.A., B.C.L. 1852
Morrison, Rev. James D., B.A. 1868
Morrison, John, B.A. 1870
Munro, Rev. Gustavus, B.A. 1874
Naylor, W. H., B.A 1885
Newnham, Rev. Jarvois A., B.A. 1883
*Perkins, John A., B.A. 1862
Perrigo, James, B.A. 1869
*Plimsoll, Reginald J., B.A 1867
Ramsay, Robert A., B.A., B.C.L. 1867
Robins, Sampson Paul, B.A. 1868
*Rodger, David (Hon). 1856
Ross, Geo., B.A., M.D 1866
Roy, Rev. James, M.A., Victoria Col. (ad eun) 1879
Scrimger, Rev. John, M.A., Toronto University (ad eun) 1884
Shaw, Rev. W. J., M.A., Victoria Col. (ad eun) 1880
*Stewart, Rev. Colin Campbell, B.A. 1870

Sweeney, James F., B.A. 1881
Tabb, Silas Everett, B.A. 1869
Taylor, Rev. Ernest M. 1882
Thornburne, John (Hon) 1861
Trenholme, Norman W., B.A., B.C.L. 1878
Torrance, Rev. Edward F., B.A. 1874
Wallace, Rev. R. W., B.A. 1875
Ward, George B., B.A 1880
Whillans, Rev. Robert, B.A 1883
White, Wm. J., B.A., B.C.L. 1886
Wicksteed, Rich. J., B.A., B.C.L. 1866
*Wilkie, Daniel (Hon) 1869
Wilson, John, B.A. 1870
Wotherspoon, Ivan Tolkein, B.A 1869

* Deceased.

MASTERS OF ENGINEERING.

Dawson, William B., B.A., B.A.Sc. 1880
McLeod, Clement H., B.A.Sc. 1878
Waddell, J. A. L., B.A.Sc. (ad eun) 1882

MASTERS OF APPLIED SCIENCE.

Adams, Frank, B.A.Sc. 1884
Thompson, Wm. T., B.A.Sc. 1882
Wardrop, Norval, B.A.Sc. 1884

BACHELORS OF CIVIL LAW.

*Abbott, Christopher C. 1850
Abbott, Harry, 11 Hospital St., Montreal. 1878
Abbott, John J. C., 11 Hospital St., Montreal 1854
Abbott, John B., 11 Hospital St., Montreal 1874
Adam, Joseph, 38 St. James St., Montreal 1878
Adams, Abel, Waterloo 1867
Allan, Irvine 1882
Alguire, J. C., Montreal 1880
‡Archibald, John Sprott, M.A., 102 St. Francois Xavier St., Montreal 1870
Archambault, Henri 1874
Archambault, Jos. L. C., 488 Craig St., Montreal 1871
Armstrong, Louis, 11 St. James St., Montreal 1861
Ascher, Isidore G., Montreal 1863
‡Atwater Albert W., Montreal 1880
Austin, Joseph E., Montreal 1880
Aylen, John, M.D., Aylmer, Q. 1861
Aylen, Peter, B.A 1854
Aylmer, Henry, Hon., jun., Melbourne, Q. 1881
*Badgley, Frank H. 1852
Bagg, Robert Stanley Clark, 19 St. James St., Montreal 1871
Bampton, George E., Lachute 1879
Baril, Joseph, Montreal 1884
Barnard, Arch. E., Montreal 1882
Barnston, John G., Manitoba 1856
Barry, Denis, 6 St. James St., Montreal. 1872
Baynes, Edward Alfred, Montreal 1867
Baynes, O'Hara, Montreal 1874
Beaudin, Simeon, 44 St. Vincent St., Montreal 1878
Beauchamp, Joseph, 89 St. James St., Montreal 1878
Beaudet, Omer, Lotbiniere, Q. 1882
Bergeron, Horace, Beauharnois, Q 1877
Benjamin, Lewis N., Montreal 1863
Beaubien, Nap. H., Yamachiche, Q ... 1877
Berthelot, Louis H., 7 Beaver Hall Sq., Montreal 1878
Berthelot, Jos. B., Montreal 1880
‡Bethune, Meredith B., M.A., 11 St. Sacrament St., Montreal 1869
Birny, Jean B. S., Montreal 1880
Bisaillon, Francois Joseph, 11 Place d'Armes Hill, Montreal 1876
Bissonnette, Louis A., 36 St. Vincent St., Montreal 1878
*‡Bothwell, John A., B.A 1869
Bouthillier, Charles F., 57 Union avenue, Montreal 1867
Boyd, John, B.A., Toronto 1864
Bowie, Duncan E., Montreal 1873
Brakenridge, James W., Montreal. 1880
Branchaud, Athanase, 14 St. James St., Montreal 1862
Brooke, C. J., 58 St. Francois Xavier St., Montreal 1878
Brooke, George H., Aylmer, Richmond, Q 1882
‡Brown, Albert J., Quebec 1886
Buchan, John S., St. Andrews, Q. 1884
Bullock, Wm. E., B.A 1863
Busteed, E. B., 273 Bleury St., Montreal. 1879
Butler, Thomas P., Montreal 1865
Cameron, John D., B.A., Dewittville, Q. 1885
Capsey, George, Bedford, Q 1877
Calder, John, 67 St. Sulpice St., Montreal 1871
Carden, Henry 1860
Caron, Adolphe P., Quebec 1865
Carter, Christopher B., 103 St. Francois Xavier St., Montreal 1866
*Carter, Edward, Q.C., Montreal 1864
Carter, Geo. F., 31 Cadieux St., Montreal 1879
Chamberlin, Brown, Ottawa 1850
Chamberlain, John, jun 1867

Chambers, A. Busteed, Napanee 1875
Charland, Alfred 1863
Charette, Pierre P., Montreal..... 1877
Chauret, Amedee, Montreal 1873
Chauveau, Alexandre, Quebec..... 1867
Choquette, Frs. X..... 1874
Choquet Ambroise, 42 St. Sulpice St., Montreal..... 1865
Claxton, Albert G. B., Montreal 1885
Cloran, Henry Joseph, Montreal..... 1882
Cornell, Z. E., Montreal..... 1879
Couillard, Edouard, 56 St. Gabriel St., Montreal..... 1875
Couillard, Jean B..... 1866
Coutlee, Lewis W. P., Hull, Q..... 1873
Conroy, Robert Hughes, Aylmer, Q..... 1869
Cooke, Joseph P., Montreal..... 1880
Cooke, Geo. F., B.A..... 1884
Cowan, Robert C., 235 St. James St., Montreal..... 1862
Crankshaw, James, Montreal..... 1882
Creighton, J. G. Aylwin, Ottawa..... 1880
*Crimmon, W. J..... 1878
Cross, A. S., St. James St., Montreal... 1878
Cross, Alexander, Ormstown, Q..... 1881
Cross, Wm. Heber, Montreal..... 1882
Crothers, Robert A., B.A., Bedford, Q.. 1878
Cruikshank, Wm. G., 60 St. James St., Montreal..... 1872
Cullen, James, Chateauguay, Q..... 1884
Curran, Joseph C..... 1862
Cushing, Chs.. 110 St. James St., Montreal 1860
*Cushing, Lemuel, jun., M.A..... 1865
Daly, J. C..... 1858
Dansereau, Arthur, Montreal..... 1865
Dansereau, Clement, 62 St. Hubert St., Montreal..... 1877
Darby, Daniel, Waterloo..... 1870
Darey, Pierre J., M.A., Montreal..... 1868
David, Alphonse, 186½ Notre Dame St., Montreal..... 1872
Davidson, Charles P., M.A., 182 St. James St., Montreal..... 1863
Davidson, Leonidas Heber, M.A., 217 St. James St., Montreal..... 1864
Day, Edmund T., 192 Notre Dame St., Montreal..... 1863
DeBeaumont, Alfred L., Montreal..... 1880
Decary, Alderic, 188 St. Denis St., Montreal..... 1879
Demers, Jean Baptiste, Montreal..... 1883
DeMartigny, Charles L., Montreal..... 1880
DeMartigny, Alphonse L., Varennes, Q. 1881
Desaulniers, Alexis L..... 1861
Desaulniers, Henri Lesieur, Montreal... 1864
Desaulniers, Dionis, 223 Notre Dame St., Montreal..... 1876
Desmarais, Odilon, St. Hyacinthe..... 1876
DesRivieres, Rodolphe, 15 St. Vincent St., Montreal..... 1875
Desrochers, Jean L. B..... 1863
DesRosiers, Joseph, 221 St. Lawrence St., Montreal..... 1873
Dickson, W. E., Montreal..... 1883
Doak, George O., Coaticook, Q..... 1863
‡ Doherty, Charles J., 13 Hospital St., Montreal..... 1876
Doherty, Thomas J., Montreal 1868
Dorion, Adelard A. L., 160 Notre Dame St., Montreal..... 1862
Dorion, Louis C. W., 24 St. James St., Montreal..... 1877
Dore, Pierre J., Laprairie..... 1880
* Doutre, Gonzalve..... 1861
Doutre, Pierre..... 1858
Downie, D., Montreal..... 1880
Driscoll, Netterville H., 64 St. James St., Montreal..... 1861
* Drummond, William D..... 1867
Dubuc, Joseph, Manitoba..... 1869
Duchesnay, Henry J. T., Beauce, Q..... 1866
‡ Duclos, Charles A., B.A., Montreal..... 1884
Duffett, Henry J., B.A., Megantic, Q.... 1885
Duffy, Henry T., B.A., Sweetsburg, Q.... 1878
Duhig, John T, Quebec..... 1882
Dugas, Francois O., Montreal..... 1880
Duncan, Alexander E., B.A., Montreal.. 1879
Dunlop, John, 102 St. Francois Xavier St., Montreal..... 1860
Duprat, Pierre N..... 1866
Durand, Nephtalie, 61 St. Sulpice St., Montreal..... 1864
Elliott, R. J., Quio, Q..... 1886
Ethier, Leandre, 352½ Lagauchetiere St., Montreal..... 1879
Ethier, Marc, 25 St. Gabriel St., Montreal 1877
Fair, John, jun., Montreal..... 1883
Falconer, Alex., B.A., Montreal..... 1884
Faribault, Joseph E., L'Assomption, Q... 1878
Farmer, Wm. O., Montreal..... 1866
Fay, John E., Knowlton, Q..... 1878
Fisher, Roswell C., Montreal..... 1869
Fisk, John J., Coaticooke 1868
Fleet, Charles J., B.A., Montreal..... 1879
Foran, Thomas P..... 1870
Forget, Adelard, 64 St. Gabriel St., Montreal..... 1877
Forster, Joseph L., Montreal..... 1881
Foster, George G., Knowlton, Q..... 1881
Franks, Albert W 1871
*Gardiner, Wm. F..... 1856
Galarneau, Joseph Antoine..... 1864
Galbraith, William, Kingston, O..... 1875
Garon, Alphonse P 1882
Gaudet, Oscar, 160 Notre Dame St., Montreal 1878
Gauthier, Antoine N., Sault au Recollet, Q 1881
Gauthier. D. Z., Sorel, Q..... 1859
Gelinas, A., Manitoba..... 1879
Geoffrion, Christopher A., 40 St James St., Montreal 1868
Gibb, James R., Montreal 1868
Gilman, Francis E., M.A., 138 St. James St., Montreal 1865
Girard, Alfred C., Marieville 1882
Girouard, Desire, 56 St. Francois Xavier St., Montreal 1860
Glass, James M., 62 St. Francois Xavier St., Montreal 1877
‡Goldstein, Maxwell, Montreal 1876
‡Gordon, Asa, Aylmer, Q. 1862
Gosselin, Jean, Quebec 1877
‡Goodhue, Henry S. W., Montreal..... 1877
Goyette, Henri A., Beauharnois, Q..... 1880
Grahame, Dugald, 1134 Dorchester St., Montreal 1883
‡Greenshields, James N., 102 St. Francois Xavier St., Montreal..... 1876
Greenshields, Robert A. E., B.A., Montreal, Q..... 1885
Guertin, Alfred L., Montreal 1882
Grenier, Amedee L. W..... 1863
Guerin, Edmund W. P., B.A., Montreal . 1881
Hackett, Michael F., Stanstead, Q..... 1874

Hague, Frederick, Montreal 1883
Hague, Henry J., B.A., Montreal 1885
Hall, John S., B.A., 131 St. James St., Montreal 1875
Hall, William A., 34 St. James St., Montreal 1863
Hammond, Henry R., Chatham 1880
Harnett, Wm. de Courcy, Montreal 1870
Hart, Lewis A., M.A., 194 St. James St., Montreal 1869
Hemming, Edward J., Arthabaska 1855
‡ Hodge, David W. R., B.A., Sherbrooke, Q 1874
Holton, Edw., 138 St. James St., Montreal 1865
Houghton, John G. K. 1863
Howard, Rice M., Winnipeg 1869
Houliston, Alexander, Three Rivers, Q .. 1865
Hunter, Herbert S., Montreal 1880
Hunter, Walter, Hamilton, O 1883
*Huntington, Russ Wood 1875
Hutchins, Horace A., East Farnham 1883
‡Hutchinson, Matthew, Montreal 1873
Ingalls, Allen G., Granby, Q 1881
Jackson, Samuel W., Montreal 1881
Jenkins, George E. 1874
Jodoin, Isaie 1858
Johnson, Edwin R., Stanstead, Q 1866
Joliffe, William J., Montreal 1882
Jolly, James G., Rockburn, Q 1885
Jones, Richard A. A., B.A., Montreal 1864
Joseph, Joseph O., 33 St. Gabriel St., Montreal 1864
Kavanagh, H. J., 117 St. Francois Xavier St., Montreal 1878
Keller, Francis J., New York 1869
*Kelly, John P 1826
Kemp, Edson, B.A., Montreal 1859
Kenny, Wm. R., Aylmer, Q 1865
Kirby, James, M.A., Montreal 1867
Kittson, Geo. R. W., 60 St. James St., Montreal 1867
Klock, Robert A., Montreal 1882
Knapp, Frederick A., 17 St. John St., Montreal 1877
Labadie, M. T. Adolphe, Montreal 1874
Labadie, Y. A. Odilon, Montreal 1874
Lacoste, Arthur, Montreal 1869
Laflamme, R. G., Montreal 1856
Laflamme, Leopold, 42 St James St. Montreal 1869
Lafleur, Eugene, B.A., Montreal 1880
*Lafrenaye, P. R 1856
Lambe, William B., 63 St. Gabriel St., Montreal 1850
Lanctot, Husmer, 3 Place d'Armes Hill, Montreal 1878
Lanctot, Mederic, 69 Upper St Urbain St., Montreal 1860
Lane, C., B.A., Montreal 1881
Laplante, Jean Bte., St. Stanislas 1880
Lareau, Edmond (ad eun), Montreal 1874
Lariviere, Joseph 1874
Larose, Telesphore 1860
Lasalle, Lucien, 6 St. James St ,Montreal 1877
Laviolette, Pierre B., 16 St. Vincent St., Montreal 1878
Laurier, Wilfrid, Arthabaskaville, Q 1864
*Lay, Warren Amos 1867
Lawlor, Richard S., Aylmer, Q 1865
Leach, David S., Montreal 1861
*Leach, Robert A., M.A 1860
Lebœuf, Louis C., 57 St. Gabriel St., Montreal 1873
Leblanc, Albert, 23 St. Denis St., Montreal 1879
Ledieu, Leon, 1 St. Pierre St., St. Henri, Montreal 1879
*Lefebvre, Toussaint Z., Montreal. 1882
Lefebvre, Frederic, 6 St. James St.,Montreal 1863
Lebourveau, Steadman A., Montreal 1876
Leet, Seth P., 163 St. James St., Montreal 1879
Leet, Lynn Tell, Montreal 1883
Lighthall, W. D., B.A., Montreal 1881
Lighthall, George R., Montreal 1882
Levy, J. C. E., 20 St. Louis St., Montreal 1878
Lonergan, James, 34 St. James St.,Montreal 1873
Lonergan, Michael L. S., Montreal 1871
Loranger, Louis George 1863
Lyman, Albert, B.A., Montreal 1881
Lyman, Elisha Stiles 1865
Lyman, Frederick S., B.A., Montreal ... 1869
‡Lynch, Wm. W., Quebec 1868
Mackay Frs. S., Papineauville, Q 1886
Mackenzie, Fred., Montreal 1861
Mackie, John, Quebec 1886
Macpherson, Kenneth R., B.A., Montreal 1884
Madore, Camille, Notre Dame de Grace. 1880
‡Major, David, 61 St. Gabriel St., Montreal 1875
Major, Edw. Jas., 403 Guy St., Montreal 1871
‡Marler, Wm. De M., B.A., Montreal... 1872
‡Martin, John E., Stafford, Q 1883
Martineau, Paul G., 84 Champlain St., Montreal 1879
Matheson, Roderick D., Charlottetown, P.E.I. 1884
McConnell, Arthur, Montreal 1883
McCord, David Ross, M.A., 131 St., James St., Montreal 1867
McCorkill, John C. G. S., Montreal 1877
McCormick, Duncan L., Montreal 1871
McDonald, Frank H 1873
McDonald, John S 1876
McDougall, John W. C.,Three Rivers, Q 1877
McFee, Kutusoff N., B.A., Winnipeg. 1880
*McGee, Thomas d'Arcy 1861
McGibbon, R. D., B.A.. Montreal 1879
McGoun, Archibald, B.A., Montreal 1878
*McIntosh. John, B.A 1868
McKenzie, Peter, S. G., Melbourne, Q.. 1883
McKercher, John, Montreal 1880
McKinnon, Edmund 1878
McLaren, John Robert, M.A., 525 Sherbrooke St., Montreal 1859
McLaren, John J., Toronto 1868
*McLaurin, John Rice 1867
McLean, B. C., 19 St Monique St., Montreal 1879
McLennan, William, Montreal 1880
McLennan, Francis, B.A., Montreal 1884
McLennan, Farquhar S., Montreal 1884
McMahon, Edward M., Montreal 1881
‡McMaster, Donald, Montreal 1871
*McNaughton, Peter J. 1879
Merry, John Westley, Sherbrooke, Q 1870
Messier, Damase, 56 St.Gabriel St., Montreal 1875
Messier, Joseph S., St. John, Q 1868

‡Mignault, Pierre B., 36 St. Vincent St., Montreal 1878
Mitchell, Albert Ed., Sweetsburg, Q..... 1867
Molson, Alexander, 101 St. Francois Xavier St., Montreal..... 1851
Monk, A., Montreal 1886
* Monk, Ed. Cornwallis 1870
Monk, Frederick D., Montreal 1877
Morgan, Edward A. D., Montreal..... 1882
Morin, Pierre A., Montreal..... 1878
Morris, Alexander, M.A., Toronto, O 1850
Morris, John L., 40 St. John St., Montreal..... 1859
Morrison, Adelard, Napierville, Q..... 1879
Murray, J. Ralph, B.A., Montreal..... 1886
*Nagle, Sarsfield B... 1862
‡Nicholls, Armine D., B.A., 48 Victoria St., Montreal..... 1879
Nichol, Thomas, M.D., LL.B., 140 Mansfield St., Montreal..... 1875
Nutting, Charles A., Waterloo, Q..... 1872
O'Halloran, George F., Cowansville, Q... 1885
Ouimet, Adolphe P., 332 Lagauchetiere St., Montreal..... 1861
†Oughtred, Allan R., Sheridan, O..... 1881
Painchaud, Joseph, Montreal..... 1880
Palliser, Joseph, 17 St. John St ,Montreal 1877
Panet, Edouard A..... 1874
Papineau, Joseph G., 32 St. James St., Montreal 1869
Pariseault, Charles Ambroise 1859
Pelletier, Louis C., 446 Mignonne St., Montreal 1877
Perras, F. X., 4 St. James St., Montreal.. 1878
Perry, Joseph, New Orleans 1869
*Perkins, John A., M.A..... 1860
Perodeau, Narcisse, 5 St. Therese St., Montreal 1876
Piche, Aristide..... 1868
Pillet, J. Henri, Court House, Montreal.. 1879
*Plimsoll, Reginald J., M.A..... 1861
Polette, Wm. A., Montreal 1881
Polette, L T..... 1886
Poutre, Felix E., Montreal 1875
Power, Alexander W. A , Ottawa..... 1868
Prefontaine, Raymond, Montreal..... 1873
Purcell, John D., 146 St. James St., Montreal 1877
Rainville, Henri Benj., 43 St. Gabriel St., Montreal..... 1873
Ramsay, Robert A., M.A., 186 St. James St., Montreal..... 1866
Raynes, Charles, B.A., Montreal..... 1881
Reddy, Wm. B. S., Montreal..... 1880
*Redpath, Wm. W., B.A..... 1881
Ricard Damase F. J..... 1859
Rielle, Norman T., B.A., Montreal..... 1858
Richard, Emery Ed., Battleford, N.W.T. 1867
Richard, Edward E..... 1868
Ritchie, Wm. F., B.A., Montreal..... 1879
Rixford, Wm. Hawkins, San Francisco, Cal 1865
Robertson, David E., Lennoxville, Q.... 1883
Robidoux, J. Emery, Montreal..... 1866
Robillard, Emile..... 1874
Robillard, Ovide..... 1886
Rochon, Charles A., 212 Notre Dame St. Montreal..... 1861
Rogers, John Henry, B.A., Montreal.... 1884
Rose, Wm., London, England..... 1866
Ross, Walter Lord, 11 Hospital St., Montreal..... 1879
Rutherford, Alex. C., Woodstock, ... 1881
Rutherford, McC., Woodstock 1881
Sabourin, Ernest 1863
Santoire, Camille, Montreal..... 1863
Sarasin, Ferdinand Leon, 16 St. Vincent St., Montreal..... 1871
Scallon, Wm., Montreal..... 1876
Sexton, James Ponsonby, 59 St. Francois Xavier St., Montreal 1860
Sharp, W., Prescott 1880
Short, Robert, Richmond, Q..... 1867
Sjorstrom, Paul R. D., Sherbrooke, Q... 1881
Smith, Arthur, B.A , Montreal..... 1885
Smith, Robert C., Montreal..... 1881
Shortiss, James, Three Rivers, Q. 1881
Sicotte, V. B., Cadastre Office, Montreal. 1862
Snowdon, H. L., 67 St. Francois Xavier, Montreal..... 1856
Spong, John J. R., Montreal..... 1874
St. Jean, Edmond R., Montreal..... 1879
Stephens, Charles Henry, Montreal 1875
Stephens, George W., Montreal..... 1863
Stephens, Romeo H., 56 St. Francois Xavier St., Montreal..... 1850
Stephens, Charles O..... 1864
‡Struthers, Irving E., Phillipsburg, Q.. . 1885
Tache, Pascal, Montreal..... 1876
Tait, Melbourne, Montreal 1862
Taschereau, Arthur, Quebec... 1864
Taylor, A. Dunbar, B.A., Montreal..... 1878
Taylor, Reid, Montreal..... 1869
Terrill, Joseph Lee, Stanstead, Q..... 1865
Torrance, Fred. W., M.A., Montreal.... 1856
‡Trenholme, Norman W., M.A., Montreal 1865
Trenholme, Edward H., M.D., Montreal 1865
Trudel, Bouthillier J., 75 Dubord St., Montreal 1879
Tucker, Henry 1883
Vandal, Philippe, 58 St. Francois Xavier St., Montreal..... 1861
Vilbon, Charles A., 44 St. James St., Montreal..... 1863
Walker, Wm. S., 112 St. Francois Xavier St., Montreal..... 1874
*Walsh, Thomas Joseph..... 1860
Watts, Wm. J., B.A., Drummondville, Q 1869
Weir, Robert S., Montreal..... 1880
Weir, Wm. A., Montreal..... 1881
Weir, Frank, Montreal..... 1882
*Welsh, Alfred..... 1864
White, Wm. J., Montreal..... 1882
Wicksteed, Richard J., M.A., Ottawa... 1868
Wight, James H 1868
Wood, Frank Ogilvie, Montreal 1870
Wotherspoon, Ivan T. (Laval), (ad eun) Montreal 1868
Wright, George C..... 1886
Wright, Wm. Mackay, B.A., Hull..... 1863
Wurtele, Charles J. C., Sorel, P.Q..... 1863
Wurtele, Jonathan S. C., Montreal..... 1870

*Deceased. ‡Elizabeth Torrance Medallists.

BACHELORS OF ARTS.

Allan, James G.(†Ⓔ), Brooklyn, N.Y.... 1873
Allan, John (Ⓝ), Leeds, Q..... 1874
Allen, Frank A., Huntingdon, Q..... 1880
Allworth, John..... 1871
Amaron, Calvin E. (Ⓟ2)Three Rivers,Q 1877
Ami, Henry Mark, Geological Survey of Canada, Ottawa, O..... 1882
Anderson, Jacob de Witt, (†Ⓒ)..... 1866
Anderson, James A., Montreal 1877
Archibald, John Sprott (†Ⓟ), Montreal... 1867
Atwater, Elbert W., Montreal 1876
Aylen, Peter, B.C.L., Aylmer, O..... 1850
Bancroft, Rev. Charles, junior, Knowlton 1866
Barlow, Alfred B. (Ⓝ), Montreal..... 1883
Barnston, Alexander. (†)..... 1857
Barron, Thomas J., Lachute, Q..... 1882
Bayne, George D., Morrisburg, O..... 1880
Baynes, Donald, London, Eng..... 1864
Beckett, Wm. Henry..... 1866
Bell, John H., Kars, O..... 1886
Bennett, James, Montreal..... 1880
Bethune, Meredith Blenkarne (†Ⓝ), Montreal..... 1866
Black, Chs., Granby, Q..... 1881
Black, James R..... 1874
Blackader, Alex. D. (Ⓝ), Montreal..... 1870
Blackader, Edward H., Montreal..... 1884
Blair, Geo. A., Manotick, O..... 1886
Blakely, Malcolm D., Montreal..... 1878
Bland, Salem G. (Morrin), Montreal..... 1877
Bland, Charles E (†Ⓒ), Montreal..... 1883
Bockus, Charles E..... 1852
*Bothwell, John A. (†Ⓝ), Montreal. 1864
Boyd, John (Ⓝ2)..... 1861
Bracq, John C. (Ⓟ2), Grand Ligne, Q... 1881
Braithwaite, E. E. (Ⓟ), Unionville, O... 1886
Brewster, Wm. (†Ⓒ)..... 1865
Brooks, Charles H.(†Ⓝ), Constantinople . 1868
Browne, Arthur Adderley (Ⓔ), Montreal, 1866
Brown, Thomas..... 1853
Browne, A. J.(†)Morrin,Windsor Mills,Q 1883
Budden, Hanbury A., Montreal..... 1885
Bull, Harcourt J. (†Ⓟ), 16 Exchange Place, New York..... 1880
Bullock, Wm. E. (†Ⓒ), Millbrook, O. ... 1860
Calder, Geo. F., Stonefield, Q 1885
Cameron, James, M.A. (†Ⓜ),Milbrook, O 1871
Cameron, John D., (†Ⓟ), Dewitville, Q. 1883
Cameron, Donald, Tiverton, O..... 1885
Cameron. Kenneth (†Ⓝ), Montreal 1884
Campbell, Henry (Morrin), Durham, Q 1885
Carmichael, James, Markham, O..... 1867
Cassels, Hamilton(Morrin), Millichamp's Building, Adelaide St., Toronto..... 1873
Cassels, Robert (Morrin) (Ⓟ), Ottawa... 1866
Chalmers, Wm. W., Huntingdon, Q..... 1886
Chandler, George H. (†Ⓝ), 32 Lorne av. Montreal..... 1875
Chipman, Clarence, Prescott, O..... 1866
Chubb, Sydney C. (Ⓝ2), Brooklyn, N.Y. 1877
Christie, John H., Lachute..... 1872
Christie, John H., Lachute..... 1884
Clark, Wallace (†Ⓡ)..... 1869
Clements, Benjamin, Berthier en haut,Q. 1886
Clerk, Ronzo H., Montreal, Q..... 1886
*Cline, John D. (†Ⓒ)..... 1871
Clowe, John D..... 1863
Cockfield, Henry, Montreal..... 1882
Colquhoun, A. H. Urquhart(Ⓔ),Montreal. 1885
Cook, Archibald H. (Morrin), Quebec.... 1869
Cornish, Rev. Geo., B.A., London University (ad eun) Montreal..... 1856
Cox, Jacob W., Noel, Hants Co., N.S.. 1876
Craig, James A. (Ⓟ2), Fitzroy Harbor... 1880
Craig, James, Renfrew, O 1874
Cross, Alexander S., (†Ⓟ), Montreal 1879
Crothers, W. J. (Ⓟ2), Phillipsburg, Q.. 1872
Crothers, Robert A. (†Ⓒ), Bedford, Q.. 1876
Coussirat, Rev. Adrian D.(ad eun) Montreal 1871
Cunningham, Rev. Thos. E. (Ⓟ2),Aylmer 1880
Currie, Alex., Widder, O 1885
Currie, Dougald (Ⓔ), Crinan, O..... 1880
Currie, W. T., Toronto, O..... 1885
*Cushing, Lemuel (†)..... 1863
Dalpe, W. H., Roxton Pond, Q..... 1886
Darey, J. Herbert (†Ⓒ), Montreal 1880
Dart, Wm. J., Laprairie 1868
Davidson, Charles Peers, Montreal..... 1863
Davidson, Rev. James (ad eun)Montreal. 1863
Davidson, Leonidas Heber, Montreal.... 1863
Dawson, William B., (†Ⓝ), Montreal.... 1874
Dawson, Rankine (Ⓟ2), Montreal 1878
Dewey, Finlay McN. (Ⓟ2), Richmond,Q 1874
Dey, William J. (†Ⓝ), Montreal..... 1871
DeWitt, Caleb S., Lockport, Ill., U.S... 1861
Dickson, James C., Montreal..... 1883
Dixon, Wellington (†Ⓔ), Montreal. 1883
Donald, James T. (†Ⓝ), Montreal..... 1878
Dougall, Duncan, Windsor, O..... 1860
Dougall, John Redpath, Montreal 1860
Drummond, Chas. G. B. (Ⓝ), Montreal.. 1862
Duclos, Charles A., (Morrin), Quebec . 1881
Duff, Archibald (Ⓜ), Airedale College, Yorkshire, Eng..... 1864
Duffett, Henry J., Megantic, Q 1883
Duffey, Henry T. (Ⓡ2), Bedford 1876
Duncan, Alex. E., Montreal 1867
Eadie, Robert (†Ⓒ), Oakland, O..... 1879
Elder, John (†Ⓟ), Huntingdon, Q..... 1881
Ells, Robert (†Ⓝ), Ottawa..... 1872
Empson, John, 71 University St., Montreal 1874
England, Luther M. (Ⓝ), Knowlton, Q.. 1883
Evans, W. Herbert, Montreal..... 1886
Ewing, Wm., Winnipeg, Manitoba..... 1878
Fairbairn, Thomas (Ⓟ2)..... 1863
Falconer, Alex. (†Ⓕ), Montreal 1881
Ferguson, James D. (Morrin), Quebec... 1880
Ferguson, John A. (Morrin), Quebec ... 1885
Ferguson, John S., Montreal 1861
Ferguson, Wm. A. (†Ⓜ), Richibucto, N. B 1881
*Ferrier, Robert W..... 1857
Fessenden, Elisha Jos., Chippewa, O.... 1863
Fleet, Charles J. (Ⓡ), Montreal 1872
Forneret, Geo. E., Dunham Flats..... 1877
Fortin, Rev. Octave (ad eun), Winnipeg, Man 1867
Fowler, William (Ⓝ)..... 1865
Fowler, Albert..... 1868
Fraser, John (Morrin)..... 1869
Fraser, William, Dundee, Q..... 1883
Fyles, Wm. A. (†Ⓒ), South Quebec 1886

Gamble, Robert, Billing's Bridge, O 1881
Gerrie, Andrew W., Fergus, O..... 1884
Gibb, Charles, Montreal 1865
Gilman, Francis Edward, Montreal..... 1862
Gore, Frederick 1861
Gould, Charles H. (†C), Montreal..... 1877
Gould, Edwin, Montreal 1856
Graham, John (†E), Williamstown, O... 1876
Graham, John H., Ormstown, Q 1878
Grandy, John, Millbrook, O 1866
Grant, Andrew S., La Guerre, Q 1885
Gray, Wm., Union Theological Sem., N. York..... 1876
Greenshields, Edward (†P), 305 Peel St., Montreal..... 1869
Greenshields, Samuel, Montreal..... 1874
Greenshields, Rbt. A. (†), Danville, Q... 1883
Green, Joseph (†C), 600 West 5th St., Cincinnati, Ohio, U.S..... 1861
Green, Lonsdale, 118 Leadenhall St., London, E. C., Eng 1864
Gregor, Leigh R. (P 2), Montreal..... 1882
Guerin, Edmund W. P., (†E), 102 St. Francois Xavier St., Montreal.. 1878
Guignard, J. A., B.A., (Un. Fr.) ad eun, Ottawa..... 1883
Hague, Henry J. (†C), Montreal..... 1882
Hall, John S., Montreal 1874
Hall, Rev. Wm., 30 Fort St., Montreal... 1861
Hargrave Isaac L., High Bluff, Man..... 1886
Hart, Lewis A., Montreal..... 1866
Harrington, Bernard J. (†N), Montreal .. 1869
Harvey, Alfred, St. John's, Newfoundld. 1874
Harvey, Charles J., St. John's, Newfld.. 1874
Haythorne, Thos., Charlottetown, P.E.I. 1884
Hemming, Henry (Morrin), Quebec 1880
Hibbard, Fred. W., Frelighsburg, Q..... 1886
*Hicks, Frank W 1864
Higgins, Joseph H., Brucefield, O 1885
Hindley, John, Montreal..... 1868
Hodge, D. W. R. (†E), Sherbrooke, Q.. 1872
Holden, Edgar De F., St. Armand Centre, Q 1886
Holiday, Caleb S., Huntingdon, Q. .. 1870
Home, W. A., (Morrin), Quebec 1885
Howard, Robt. J. B. (†N), Montreal.... 1879
Hunter, Walter, B.C.L., Hamilton, O.... 1883
Jones, Montgomery (E), Hatley, Q..... 1869
Johnston, Rev. Jas. A. (†P), Rutland, Vt 1870
Joseph, Montefiore (N), Quebec..... 1870
Kahler, Frederick A. (†C), Germantown, Phil., U.S..... 1869
Keays, Charles H., Hamilton, O..... 1880
Kelley, Frederick W. (†E), Montreal.... 1871
Kemp, Edson, Montreal..... 1859
Kennedy, Geo. T. (N), King's College.. 1868
Kennedy, Robert Alex., Ottawa, O..... 1884
*Kershaw, Philip G..... 1867
Kinnear, George, Megantic, Q..... 1883
Kirkpatrick, Robert C., Montreal..... 1884
Kirby, James (†), Montreal..... 1859
Klock, Robert A., Aylmer, P.Q 1880
Krans, Edward H. (†E), New York.... 1865
Lafleur, Eugene (†P), Montreal..... 1877
Lafleur, Paul T. (†E), Ottawa 1880
Lafleur, Henri A. (†N), Montreal..... 1882
Laing, Robert (†P), Halifax, N.S..... 1868
Lane, Campbell, 293 Peel St., Montreal.. 1879
Lariviere, Vitalien, Roxton Falls, Q..... 1880
Lariviere, Dolard, Roxton Falls, Q..... 1884
*Leach, Robert A..... 1857
Lee, Arch. (C), Pendleton, O..... 1883

*Lewis, Albert R (E)..... 1869
Lighthall, William D. (†E), Montreal... 1879
Livingstone, Colin H. (†), St. John, N.B 1886
Lochhead, Wm. (N), Listowell, O..... 1885
Lyman, A. Clarence, Montreal..... 1878
Lyman, Henry H. (†N), Montreal..... 1876
Lyman, Frederick Stiles, Montreal..... 1863
Lyman, Walter E. (M L2), Montreal... 1881
Mabon, James (†P), St. Louis de Gonzague, Q 1884
Mackay, Adams A. († M), River John, Pictou Co., N.S..... 1884
Mackie, John F. (†), Morrin, Point Levi, Q 1883
Major, George W., 1398 St. Catherine St., Montreal 1870
Marceau, James..... 1884
Marler, Wm. de M. († M), Montreal.... 1868
Martin, Alfred W., Montreal..... 1882
Martin, J. C. (E), Brown's Creek, P.E.I. 1885
Mason, James L 1859
Masse, Godefroi (†) Grand Ligne, Q 1884
Matheson, John, Presbyterian College, Montreal..... 1876
Mattice, Corydon J., Cornwall, O 1859
Maxwell, John (N), L'Orignal, O..... 1879
McClure, Wm. († M), Montreal 1879
McConnell, Richard G. (N), Montreal.... 1879
McCord, David Ross, Montreal 1863
McDonald, Hector C., Flat River, P.E.I. 1881
MacDonnell, Richard L. († C), Montreal. 1873
MacDougall, John (†P), Ormstown, Q .. 1886
MacDuff, Alexander Ramsay..... 1866
McFarlane, James A. († P), Pontiac, Q.. 1885
MacKay, Daniel, Pictou, N.S..... 1882
McFadyen, Allan L., Montreal..... 1878
McFee, Kutusoff N. († P), Winnipeg, Man..... 1874
McGibbon, Robert D., Montreal..... 1877
McGoun, Archibald († P), Montreal..... 1876
McGregor, Archibald F., Listowell, O... 1877
McGregor, James (C), Montreal 1864
McGregor, Duncan, Guelph, O..... 1871
*McIntosh, John († M)..... 1870
McIntyre, Hector A., Manilla, O..... 1881
McKenzie, John, (Morrin)..... 1867
*McKenzie, Robert (P)..... 1869
McKenzie, Wm. A. (C), Lanark, O..... 1881
McKibbin, Wm. M., Edwardsburg, O... 1875
McKibbin, Robert, Edwardsburg, O..... 1879
McKillop, Roland, Inverness, Q..... 1878
McKillop, Peter C., Inverness, Q..... 1882
McLaren, David C., Montreal..... 1878
McLaren, John R., 525 Sherbrooke St., Montreal 1856
McLaren, Harry (†) 67 Mansfield St., Montreal 1858
McLean, Neil W. (Morrin), (P 2)..... 1869
McLean, Bredalbane S., Montreal..... 1869
McLennan, Duncan H., Alexandria, O... 1871
McLennan, John S. (P), Montreal..... 1874
McLennan, H. S. (†M L), Montreal..... 1885
McLennan, George A., Underwood, O.... 1885
McLeod, Arch., Orwell, P.E.I 1881
McLeod, Duncan C. († M), Charlottetown, P.E.I..... 1873
*McLeod, Hugh 1866
McLeod, Findlay J., Winnipeg, Man.... 1872
McLeod, Norman (Morrin), Brompton Gore, Q..... 1883
McNabb, Robt., Woodville, O 1881
*McOuat, Walter (N)..... 1865

McOuat, John W., Inkerman, O..... 1886
McRae, Duncan A., Apple Hill, O..... 1886
McWilliams, Andrew, Ulster, O 1884
Macpherson, Kenneth R. († N),Montreal 1881
MacVicar, J. Harvey, Montreal 1885
Mercer, Walter D., Montreal..... 1880
Merritt, David, Prescott..... 1863
Molson, Charles A. († N), Montreal..... 1880
Moore, Francis X 1868
Morin, Joseph L. († ML), Three Rivers Mass, U.S..... 1882
Morris, William, Montreal..... 1859
Morris, Alexander, Toronto, O..... 1849
Morrison, John 1866
Morrison, Jas. D. († N), Ogdensburg,N.Y 1865
Morrison, David W. (E), Ormstown, Q.. 1870
Muir, Andrew C., Georgetown, Q..... 1880
Muir, John F 1864
*Muir, Rev. E. P. (ad eun)..... 1865
Munroe, Gustavus, Embro, O..... 1871
Munro, Murdoch, Williamstown, L'Orignal..... 1872
*Murray, Charles H. († N)..... 1873
Murray, J. Ralph († M), Montreal..... 1883
Naylor, W. H. († P), Clarendon, Q..... 1872
Newnham, Jarvois A., Montreal 1878
O'Halloran, G. F., Cowansville, Q 1883
O'Sullivan, R. Benj., Jamaica, W.I..... 1886
Ogilvie, Archibald N., Georgetown, Q... 1880
Oliver, Theophilus H. (Morrin) (P2).... 1866
Parent, Manasseh B. (†), St. Pie, Q..... 1884
Parsons, Simeon H., B.A. (Univ. New Brunswick) (ad eun), Montreal..... 1881
Patterson, Wm. (C), Ormstown, Q..... 1886
Pease, George H. († C), 120 Broadway, New York..... 1864
Pedley, Hugh, Cobourg, O..... 1875
Pedley, Charles S. (P), Port Perry, O .. 1878
Pedley, James W., Cobourg, O..... 1884
Pedley, Francis (P), Cobourg, O..... 1886
Perrigo, James (N), Montreal 1866
* Perkins, John A 1858
Petit, Rev. Charles B..... 1850
Phillips, Charles W 1852
Pillsbury, Carroll E., Augusta, Me., U.S. 1880
*Plimsoll, Reginald J..... 1858
Porter, Jas. A. († N), Kemptville, O. ... 1883
Pritchard, John C. (Morrin), Quebec.... 1881
Ramsay, R., Anstruther, B. C. L. († N), Montreal..... 1862
Raynes, Charles, Montreal..... 1880
*Redpath, George D., Montreal 1857
*Redpath, William W..... 1879
Reddy, Herbert L. (E) 1873
Reid, James (P2), North Mountain, O . 1881
Rexford, Elson I. (P), Quebec..... 1876
Rielle, Norman T. († E), Montreal..... 1882
Richardson, A. W., Montreal 1883
Ritchie, Arthur F. (C), St. Paul, Minn .. 1873
Ritchie, Wm. F. († C), 660 Sherbrooke St, Montreal 1875
Ritchie, Philip E. († ML), Montreal ... 1886
*Roberts, George F. (P 2)..... 1880
Roberts, W. D., Montreal..... 1886
Robertson, Alex († N), 1100 Dorchester St., Montreal 1870
Robertson, Geo., Garafraxa, O..... 1881
*Robertson, Robert (P)..... 1877
Robertson, Philip M., Montreal..... 1885
Robins, Sampson Paul († M), Montreal.. 1863
Rogers, George (N 2), Montreal, Q..... 1884
Rogers, J. H. († P), Huntingdon, Q..... 1882
Rolph, Nathaniel (Morrin), Quebec 1885
Rondeau, Sam. (ML2), St Elizabeth, Q.. 1884
Ross, George († C), Montreal..... 1862
Ross, James († P), Huntingdon, Q..... 1878
Ross, L. F., Montreal 1883
Ross, J. T., (†)(Morrin), Quebec 1883
Russell, Henry, (Morrin) 1869
Rutherford, Alex., B.C.L., Ormond, O... 1881
Scott, Henry C. (Morrin) (P), Montreal.. 1866
Scott, Matthew H. († N), Bristol, Q..... 1877
Scrimger, Alex. (†), Galt, O..... 1883
Scriver, Charles W., Hemmingford, Q... 1880
Shearer, W. K., Athelstan, O..... 1883
Sherrill, Alvan F. († N), Omaha, Nebraska, U.S 1864
Silver, Herbert J. (Morrin), Danville, Q.. 1885
Slack, George, Montreal..... 1868
Smith, Arthur, W. (N), Montreal..... 1882
Sparling, Wm., Stafford, O 1886
Stethem, George T..... 1859
Stevens, William H., St. Johns, Q 1879
Stevenson, Samuel C., Montreal 1874
Stevenson, Rev. J. F., B.A., London Univ. (ad eun), Montreal..... 1876
Stewart, Robert, Lachute, Q..... 1882
*Stewart, Colin Campbell († N)..... 1867
Stewart, Wm. S. († C), Charlottetown, P.E.I..... 1878
Stewart, Wm. G. († N), Arundel, Q..... 1885
Stirling, Robert, Montreal..... 1882
Stuart, Gustavus G. († P), Quebec..... 1875
Swabey, Chas. († N), Charlottetown, P.E.I 1886
Sweeney, James F., Franklin, Q..... 1878
Tabb, Silas Everett (P), Sherbrooke, Q.. 1869
Taylor, Archibald D. (C), Montreal 1874
Taylor, Edw. T., Peshawa, Bengal, India. 1878
Taylor, Ernest M., Chambly, Q..... 1875
Thomas, Henry W. († E), Montreal 1874
Thomas, F. Wolferstan G., Montreal.... 1882
Thompson, G. T. A., Harbor Grace, Nfld. 1885
Thornton, Rev. R. McA., Toronto (ad eun), London, England..... 1872
Thornton, Hastwell W. (N), New Richmond, Q 1878
Topp, Francis († M). Granby, Q..... 1886
Torrance, Edward F. (P 2), Peterboro, O. 1871
Torrance, Frederick W., Brandon, Man.. 1878
Torrance, John Fraser, Montreal 1872
Trenholme, Norman Wm. († P), Montreal. 1868
Trenholme, Chas. W. (N), Montreal..... 1882
Tucker, Jno. W. († C), Montreal..... 1881
Tunstall, Simon J. (E), Montreal..... 1873
Tupper, James S. (C), Winnipeg, Man.. 1871
Turner, Walter H. († E), Montreal 1884
Unsworth, Joseph K. († E), Georgetown, Q 1884
Walker, George F., Waddington, N.Y., U.S 1882
Wallace, Robt. W. (P), London, O..... 1872
Wallace, Wm. E., Montreal, Q..... 1886
Walters, Albert H. (Morrin), Quebec 1885
Ward, George B. († C) 1874
Warriner, Rev. William H. († E), Yorkville, O..... 1877
Watson, Murray, Montreal 1885
*Watson, Alindus J..... 1876
Watts, Wm. John (C), Drummondville, Q 1866
Weeks, Wm. A., Charlottetown, P.E.I.. 1881
Wellwood, James, Minnedosa, Man..... 1878
Whillans, George (P2), Ottawa..... 1872
Whillans, Robert, Ottawa..... 1872

White, William, Montreal 1881
White, Walker W., B.A. (Univ. New Brunswick) (ad eun)..... 1885
Wicksteed, Richard J. (C), Ottawa..... 1863
Wilson, John (P)..... 1866
Wood, Frank O., Montreal 1869
Wood, Holton H., 764 Sherbrooke St., Montreal 1879
Wood, Thomas F., Montreal 1869
Wotherspoon, Ivan T. (Morrin) (P), Montreal 1866
Wright, George C., Hull, Q 1884
Wright, Wm. McKay, Ottawa 1861
Walker, John (Morrin), Quebec..... 1880
Walker, Thomas..... ... 1860
Yales, Nelson P. (P), Frelighsburgh, Q.. 1886

[C] First Rank Honours in Classics.
[E] do do do in English Literature, etc.
[M] do do do in Mathematics and Physics.
[N] do do do in Natural Science.
[P] do do do in Mental and Moral Philosophy.
[ML] do do do in Modern Languages.

[C2] Second Rank do.
[E2] do do
[M2] do do
[N2] do do
[P2] do do
[ML2] do do

† Indicates the Gold Medallist for the subject denoted by the letter to which it is prefixed: or, if standing alone, for best general standing. For the titles of the Gold Medals assigned to the several subjects since 1864, see § VI of Faculty of Arts.

In 1857, 1858, 1859, the Chapman Medal was awarded for the best general standing: 1860, 1861, 1862, for Classics; 1863 for Mental and Moral Philosophy; 1864 for Natural Science.

In 1862 the Prince of Wales Medal was awarded for Natural Science; 1863 for Mathematics and Physics; 1864 for Classics.

BACHELORS OF APPLIED SCIENCE

In Civil and Mechanical Engineering.

Archibald, Hy. A., Montreal 1881
Batcheller, Alvan A., Bedford, Q 1875
Bell, Robt. (N), M.D., Geological Survey, Ottawa 1861
Boswell, St. George J., Assistant Engineer Harbor Improvements, Quebec.... 1874
Boulden, Chs. M., Millersburg, Ky., U.S. 1878
Brodie, Robert J., Smith's Falls, O..... 1873
Chipman, Willis (N), Brockville, O..... 1876
Collins, John J., Manotick, O..... 1882
Cowie, Fred. W., Caledonia, O..... 1886
Davis, Allan R., Adolphustown, O..... 1884
Dawson, Geo H., Quebec, Q..... 1886
Dawson, Wm. B., B.A., Montreal..... 1875
Dowling, Donaldson Bogart (‡), Napanee, O 1883
Drummond, J., Manitoba..... 1882
Dudderidge, James, Lachute, Q..... 1880
Furlong, Gordon, Lachute, Q..... 1884
Fortier, Sam., Leeds, Q..... 1885
Foster, Philip L., Longueuil, Q..... 1882
*Frothingham, John J..... 1875
Graham, Wm., Montreal..... 1884
Green, Thomas D., Dominion Lands Office, Ottawa 1882
Harvey, Chas J., B.A., St. John's, Newfoundland..... 1874
Hawley, David F., Aird, Q..... 1876
Hetherington, Frederick, Quebec..... 1876
Hall, Richard, Trenton, O..... 1878
Hill, Arthur E., Sydney, C.B..... 1875
Hislop, John L., C. P. Railway..... 1884
Jones, Thos. H., Bradford, O..... 1877
Kennedy, George T., M.A 1873
Kerry, John G. G. (‡B), Montreal..... 1886
Lesage, T. W., Montreal..... 1885
McDonald, John, C. P. Ry 1884
McEvoy, Jas., Ottawa, O 1883
McKenzie, John M., Stellarton, Pictou, N.S 1884
McLeod, Clement H., Montreal..... 1873
McLean, Alex. J., Canadian Pacific Ry.. 1874
McMillan, David E., Montreal..... 1874
Miller, Frederick F. (†), Napanee, O..... 1882
Moffatt, James W., Montreal 1884
O'Dyer, John S. (‡), Dominion Lands Survey 1880
Ogilvy, David, C. P. Ry 1884
*Page, John..... 1875
Richard, Louis Napoleon, Ottawa..... 1881
Robertson, George S., Can. Pacific Ry.. 1874
Rogers, Richard B., Ashburnham, O.... 1877
Ross, George, Toronto, O 1875
Ross, Philip D., Montreal..... 1878
Routhier, Jude J. T., Vankleek Hill, O.. 1875
Saunders, Bryce J., Farmersville, O..... 1886
Skaife, Wilfred T., Montreal 1880
Smith, Richard F., Montreal 1183
Smith, Cecil Brunswick (‡), Winona, O.. 1884
Sproule, Wm. J., Harbor W'ks, Montreal 1877
Stewart, D. H., C. P. Ry. Red Rock, L.S 1873
Swan, John, Windsor St., Montreal 1878
Thompson, Wm. T. (N), Cannington, O.. 1877
Thompson, Hedley Vicars (‡), Oxford, N. S..... 1885
Trueman, Harman, Truemanville, N. S 1886
Waddell, Robert Wm., Cobourg, O..... 1881
Waddell, J. A. L., C.E., of the Rensselaer Polytechnic Institute of Troy, N.Y. (ad eundem). Japan 1882
Walbank, Wm. McL., Union av., Montreal 1877
Wardrop, Norval, Brockville, O..... .. 1877
Wicksteed, Henry K., Ottawa..... 1873
Wilson, Robert A., Winnipeg, Man..... 1875

In Mining and Assaying.

Brown, Chas. H. (N 2), Montreal, Q..... 1886
Howard, Wm. H. (N), St. Andrews, Q . 1883
Low, Albert P. (N), Ottawa, O..... 1882
Macy, Ernest McC. (N), Melbourne, Q .. 1885
Mathewson, Ed. P. (N), Montreal 1885
Reid, Wm. M., Montreal, Q 1886
Robert, Joseph A., Beauharnois, Q 1884
Robertson, William F. (N 2), Montreal .. 1880
Rogers, Richard B., Ashburnham, O ... 1878
Spencer, Joseph Wm. (N), University of Missouri, U.S 1874
Torrance, John Fraser, B.A. (N)..... 1873
Trenholme, Chas. Wm. (‡ B), Montreal.. 1885
Wicksteed, Henry K..... 1874
Wilkins, Dan. F. H. (B.A., Tor.) (N), Mount Forrest, O 1875

In Practical Chemistry.

Adams, Frank (N), Geological Survey, Ottawa..... 1878
Burland, Jeffrey H. (N 2), Montreal..... 1882
Evans, Nevil N., Montreal, Q 1886
Hamilton, Edward H. (N 2), Montreal..... 1884
Weir, Arthur (‡), Montreal 1886

GRADUATES IN CIVIL ENGINEERING.

Barnston, Alexander, B.A 1859
Crawford, Robert..... 1859
Doupe, Joseph, Winnipeg, Man..... 1861
Edwards, George 1863
Frost, Geo. H., Tribune Building, N Y .. 1860
Gaviller, Maurice..... 1863
*Gooding, Oliver..... 1858
Gould, James H 1862
Kirby, Charles H., 58 Crescent St., Montreal 1860
McLennan, Christopher 1859
Reid, John Lestock, Prince Albert, Man. 1863
Rixford, Gulian Pickering 1864
Ross Arthur 1860
*Savage, Joseph 1860
Walker, Thomas, B.A 1860

‡ Gov. General's Medal for highest general standing in Examinations for Bachelor of Applied Science ; (‡ B) British Association Gold Medal.

* Deceased.

NOTE.—The Registrar of the University will be grateful for any corrections or additions to the addresses given in the above lists, and also for communication of titles which graduates may have acquired since their graduation.

Students of the University.

SESSION 1885–6.

McGILL COLLEGE.

FACULTY OF LAW.

FIRST YEAR.

Boyd, John A.,	Montreal, Q.	Emmanuel, Marcus	
Budden, Hanbury A.,	Montreal, Q	Ferguson, John,	St. Anicet, Q
Craig, Arch. Walpole,	Montreal, Q	Fry, Henry,	Montreal, Q
Doherty—,	Montreal, Q	Keddy, John F.,	Montreal, Q
Dunton, Robt. A.,	Montreal, Q	Turner, Walter H.,	Montreal, Q

SECOND YEAR.

Beauregard, Henri A.,	St. Hyacinthe, Q	Mabon, Jas.,	St. Louis de Gonzague, Q
Beauparlant—,	St. Hyacinthe, Q	Mackay, Francois S.,	Papineauville, Q
Berard, Louis,	St. Barthlemy, Q	McLean, John A.,	Lancaster, O
Bourgeois, Edouard,	Trois Rivieres, Q	McCulloch, Obadiah,	Everton
Brien, Louis A.,	St. Alexandre, Q	Majorique, Aimée	
Buie, Hector,	Montreal, Q	Pickel, F. H.,	Sweetsburg, Q
Fontaine, Victor E.,	St. Hyacinthe, Q	Robillard, Ovide,	Montreal, Q
Lamarche, J. B.,	St. Vincent de Paul, Q	Rodrigue, Joseph L.	
Lemire, Henri,	L'Assomption, Q		

THIRD YEAR.

Brown, Albert J.,	Windsor Mills, Q	Mackie, John,	Quebec, Q
Bryson, Alfred P.,	Montreal, Q	Murray, John Ralph,	Montreal, Q
Elliott, Raleigh J.,	Durham, Q	Polette, Louis T.,	Three Rivers, Q

FACULTY OF MEDICINE.

Aborn, W. H., Goderich, O.
Adams, G. W., Danville, Q.
Almon, J. M., Windsor, N.S.
Aylen, J. P., Aylmer, Q.
†Aylen, P., Aylmer, Q.
Aylen, W. W., Aylmer, Q.

Baer, D. G., Summerfield, Ill.
Bayne, G. W., Merivale, O.
Beaudry, J. S., Montreal.
Bell, J. H., Kars, O.
Berry, R. P., Lindsay, O.
Berry, J. A., Seeley's Bay, O.

†Birkett, H. S., Hamilton, O.
Beers, A. H., Montreal.
Blackader, E. H. P., Montreal.
Boyd, Jay, Vankleek Hill, O.
Boone, S. W., Fredericton, N.B.
Booth, J. S., Montreal.
Blair, G. A., Manotick, O.
†Boggs, G. W., Wolfville, N.S.
Brown, P., Montreal.
Brown, G. A., Charlottetown, P.E.I.
Bowen, W., Quebec.
Bradley, W. I., Ottawa, O.
Brunette, J. T., Cornwall, O.

Cattanach, W. C., Glenwater, O.
Campbell, G. G., Truro, N.S.
Castleman. A. L., East Williamsburg, O.
Cameron, K., Montreal.
†Campbell, A. W., Montreal.
Chalmers, W. W., Huntingdon, Q.
Christie, W., Lachute, Q.
Clouston, J. R., Maple Hill, Q.
Clark, J. L., Waterloo, Q.
Cowie, A. M., Montreal.
Coy, W. F., Kingston, O.
Conroy, C. P., Martintown, O.
†Crocket, W., Fredericton, N.B.
Creasor, J. A., Owen Sound, O.

Davis, A. H., Glen Buell, O.
Delaney, W. J., Peterboro, O.
Dewar, C. P., Ottawa, O
Desmond, F. J., Newcastle, N.B.
DeCow, D. McG., Montreal.
Dickson, J. A., Trenholme, Q.
Donald, W. M., Seaforth, O.
Dyer, R. E., Montreal.

Earl, E. H., Port Hope, O.
Easton, C. L., Easton's Corners, O.
Edgar, C. J., Napierville, Q.
Ellis, W. E., St. Catharines, O.
Ellard, J., New Westminster, B.C.
England, N. S., Dunham, Q.
Esson, F. G., Halifax, N.S.
Evans, E. J., Seaforth, O.

Ferguson, W. D. T., Cumberland, O.
Fillmore, E. W., Baie Verte, N.B.
Flagg, J. D., Morrisburg, O.
Flett, A. J., Winnipeg, Man.
Fraser, J. M., Hawkesbury, O.
Fritz, H. D., St. John's, N.B.
Fulton, C., Avonmore, O.

Gardner, A. W., Cornwall, O.
†Gairdner, T. M., Bayfield, O.
Garrow, A. E., Ottawa, O.
Gemmill, E. W., Almonte, O.
†Gibson, J. B., Cowansville, Q.
Girdwood, G. W. T., Montreal.
Gladman, G. J., Lindsay, O.
Goodwin, W. W., Baie Verte, N.B.
†Grant, J. H. Y., Ottawa, O.
Greene, T. J., Appleton, O.
Graham, J., Carp, O.
Gunne, N. D., Ailsa Craig, O.

Hamilton, A., Sutton, Q.
Hamilton, J. D., Belleville, O.
†Haythorne, T. J., Marshfield, P.E.I.
Hamer, A. L., Bradford, O.
Hall, A. G., Franklin Centre, Q.
Hall, W., Walkerton, O.
Haentschell, C. W., Pembroke, O.
Hewit, J., Quebec.
Hickey, W. H., Morrisburg, O.
Hill, R., Montreal
Hoare, C. W., Strathroy, O
Hopkins, H. J. J., Cookshire, Q.
Holmes, A. D., Chatham, O.
Hopkins, F. A., Cookshire, Q.
Hubbard, O. H., Gilsam, N.H.
Hubert, P. T., Harbor Breton, Nfld.
Hughes, J. M., Chesterville, O.
†Hughes, P. H., Strathroy, O.

Ibbotson, J. I., Montreal
Irwin, W. T. L., Pembroke, O
Irwin, H., Pembroke, O.

Jacques, H. S., Melvin, N.S.
Jayet, A., Montreal.
Johnson, J. W., Tannersville, O.

Kelly, J. A. A., Durham, O.
Kendall, H. E., Sydney, N.S.
Kennedy, J. H., Lindsay, O.
†Kennedy, R. A., Ottawa, O.
Kerr, N., Holyrood, O.
Kenney, F. L, St. John, N.B.
Kemp, H. D., Montreal.
Kirkpatrick, E. A., Kentville. N.S.
†Kirkpatrick, R. C., Montreal.
†Kinloch, J. A., Montreal.
Kincaid, R. M., Clarenceville, Q.
Kempton, E. A., Montreal.

Lafferty, A. M., Perth, O.
Lafleur, H. A., Montreal.
Lang, M. W., St. Mary's, O.
Leblanc, A., St. Henri, Q.
Leslie, A. C., Harrisburg, Dak.
Long, C. H., Keswick Bridge, N. S.
Low, D., Palmerston, O.
Loucks, F., Sterling, O.

McCardel, E. J., Dundas, O.
Macdonald, A. D, Wickham, N.B.
Mackinnon, H., Alexandria, O.
†Mackay, J. M., River John, N.S.
Mackay, Eugene, Papineauville, Q.
Mackinnon, G. W., Sunnyside, P.E.I.
Macdonell, A. E. J., Morrisburg, O.
†McCuaig, W. J., Vankleek Hill, O.
McCarthy, J. G., Sorel, Q.
†McCollum, E. P., Duar, O,
McCallum, O. F., Maitland, N.S.
McCurdy, T., Ormstown, Q.
McDonald, P. A., Alexandria, O.
McDonald, Alex., East Hawkesbury, O.
McDonald, H. N., Laggan, O.
McDonald, D. D., North Lancaster, O.
McDonald, A. L., Glendonald, O.
McDonald, Geo., Renfrew, O.
McDougall, D. S., Russell, O.
McEwen, H., Carleton Place, O.
McFarlane, M., Bristol, Q.
†McGannon, T. G., Prescott, O.
McGregor, J. G., Martintown, O.
McInnis, A., Rosario, Arg. Republic.
McIntosh, D. H., Carleton Place, O.
McKinnon, T. H., Lockport, N.S.
McKercher, H., Stittsville, O.
McKay, H. H., Plainfield, N.S.
McLellan, A. A., Summerside, P.E.I.
McLennan, D., Dunvegan, O.
McMartin, D. R., Martintown, O.
McNeece, J., Brampton, O.
McPhail, J. A., Orwell, P.E.I.
McRae, J. C., Port Colborne, O.
Martin, J. M., Brown's Creek, P.E.I.
Metcalfe, F. J., Buffalo, N.Y.
Morgan, V. H., Aultsville, O
Morrow, C., Russell, O.
Mowat, M. M., South Branch, O.
Morehouse, O. E., Upper Keswick, N.B.
Moffatt, R., West Winchester, O.

†Murray, D., Plainfield, N.S.
Murray, W. A., Jamaica, W.I.
Murray, D. A., Pictou, N S.
Muirhead, D. A., Carleton Place, O.

Noble, C. L., Sutton West, O.
Norman, T. J., Schonberg, O.

Orr, A. E., Cookshire, Q.
Orr, J. E., Mount Elgin, O.
†Orton, T. H., Hamilton, O.

Palmer, P. E., Riverside, N.B.
Parker, W. D., Hawkesbury, O.
Patterson, C. J., Toronto, O.
Park, P. C., Durham, O.
Patton, H. M., Montreal.
Pearman, H. V., Halifax, N.S.
Philp, W. S., Montreal.
†Pomeroy, L. E. M., Tweed, O.
Pothier, J. C., Woonsocket, R. I.
Potts, J. M., Belleville, O.
Porter, J. A., Kemptville, O.
Poole, A., Wakefield, Q.
†Pringle, W. R., Cornwall, O.

Quirk, E. L., Aylmer, Q.

†Raymond, A., Marcuse, Iowa.
†Raymond, G. H., Springfield, N.B.
Reavely, E., Port Robinson, O.
Richardson, G. D., South March, O.
Ross, D. L., Winthrop, O.
†Ross, L. F., Montreal.
Robertson, A. G., Iroquois, O.
Rowat W. M., Manotick, O.
†Robertson, F. D., Lennoxville, Q.
Rolph, N., Quebec.
Ryan, J., Perth, O.

Saphir, E. J., Jerusalem, Syria.
Scott, J. M., Philadelphia, U.S.
†Schmidt, A. J., Faribault, Minn.
†Schmidt, A. F., Montreal.

Scully, D. J., Lindsay, O.
†Seerey, F. J., Fredericton, N.B.
Shanks, A. L., Huntingdon, Q.
Silver, H. J., Danville, Q.
Slater, H., Toronto, O.
Smithson, R. H., Stillwater, Minn.
Springle, J. A., Montreal.
Stewart, A. D., Arundel, Q.
Stewart, W. G., Arundel, Q.
Stayner, S. R., Toronto, O.
Stephen, G. C., Montreal.

Taylor, W. B., Halifax, N. S.
Thomas, W. R., London, Eng.
Thompson, J. H., Gananoque, O.
Trapnell, H. E., Montreal.
Travers, J. B., St. John, N.B.
†Turnbull, A. R., Russell, O.

Vernier, H., Quebec.
Vipond, A. E, Montreal.

Warneford, P. H., Norton, N.B.
Walker, S. L., Truro, N.S.
Weeks, C. M., Newport, N.S.
Westley, R. A., Lancaster, O.
Weagant, A. A., Hosaic, O.
†Wetmore, T. H., Bloomfield, N B.
White, W. W., St John, N.B.
†White, F. J., Greenspond, Nfld.
Whyte, J. J., Lancaster, O.
Wheeler, C. L., Montreal.
Williams, J. F., Barrie, O.
Williams, E. P., Ottawa.
†Wilson, C. W., Cumberland, O.
Wilkins, H. P., Toronto, O.
Woodruff, T. A., St. Catharines, O.
Woodruff, E. H., St Catharines, O.
†Worthington, A. N., Sherbrooke, Q.
Wylde, C. F., Halifax, N. S.

Young, H. E., Napanee, O.
Young, A. A., Barton, Vt.
Young, J. W., Caragent, N.B.

† Passed Examination for M.D., C.M., 1886.

FACULTY OF ARTS.

Undergraduates.

FIRST YEAR.

Buchanan, Victor C.,	Montreal, Q	Reford, Andrew P.,	Montreal, Q
Deeks, W. E.,	North Williamsburg, Ont	Robertson, Jas.,	Waddington, N.P., U.S.
Evans, D. J.,	Montreal, Q	Rogers, William,	Lakefield, O
Gibson, W. D.,	Morrisburg, Ont	Scott, C. T.,	Toronto, O
Grant, David,	Montreal, Q	Shepherd, D.,	Montreal, Q
Holden, D. B.,	Montreal, Q	Smith, George H.,	Hawkesbury, O
Lucas, M. J.,	Montreal, Q	Swanson, J. J.,	Stouffville, O
MacKenzie, R. T.,	Almonte, O	Walsh, Thos. N.,	Ormstown, Q
Meighen, F. S.,	Montreal, O	Watt, W. J.,	Montreal, Q
Moore, Samuel,	Mille Isles, Q	White, D. D. J.,	Montreal, Q
Parker, J.,	Lachute, Q		

SECOND YEAR.

Browne, Alex. D., South Gloucester, O
Bryan, Andrew, Richmond, Q
Bryson, Alfred P., Montreal, Q
Campbell, C. A., Smith's Falls, Ont
Curtis, H. H., Warden, P Q
Day, John L., Montreal, Q
Duke, Wm. A., Carleton, St. John, N.B.
England, George Prevost, Montreal, Q
Giles, Wm. James, Farmersville, Ont
Goff, Henry Neville, Georgetown, P.E I.
Hall, Marshall K., Franklin Centre, Q
Howitt, William, Guelph, O
Jamieson, Walter L., Montreal, Q
Le Rossignol, James E., Montreal, Q
Lindsay, Norman, New Richmond, Q
Macallum, Fred. K. W., St. Elmo, O
McPhail, J. A., Orwell, P.E.I.
Martin, Charles J., Montreal, Q
Mason, Horace E. C., Montreal, Q
Massé, Arthur, Grande Ligne, Q
Morrison, John Archd., Ormstown, Q
Moss, Wm. Thos. Dygnam, Portage la Prairie, Man.
Naismith, Peter L., Pembroke, O
Pedley, Hilton, Cobourg, O
Pritchard, Thomas, Harriston, O
Sweeney, George R., Montreal, Q
Thurlow, Harold M., Ormstown, Q

THIRD YEAR.

Bourne, Nicholas A. F., Montreal, Q
Brown, Samuel R., Huntingdon, Q
Cameron, Wellington A., Montreal, Q
Clay, W. Leslie, P.E.I.
Colby, Chas. W., Stanstead, Q
Gerrie, John P., Fergus, O
Henderson, Robt. B., Montreal, Q
Internoscia, Antonio, Montreal, Q
Johnson, Alexander R., Montreal, Q
Johnstone, Robert, Kincardine, O
Kingston, Chas. B., Montreal, Q
Langton, J. F., Montreal, Q
Larkin, F. H., Halifax, N.S.
McArthur, Archd., Dalesville, Q
McKerchar, Colin, Glengarry, O
McLeod, Murdoch J., Valleyfield, P.E.I.
Murray, Alfred P., Montreal, Q
Naismith, James, Almonte, O
Nichols, Wm. A., Montreal, Q
Nicholson, John A., Eldon, P.E.I.
Patton, Hugh M., Montreal, Q
Rochester, William M., Montreal, Q
Russell, Walter, Bristol, Q
Sanders, William, Montreal, Q
Solandt, Andrew P., Inverness, Q
Sweeney, George R., Montreal, Q
Walsh, James, Ormstown, Q
Whyte, Charles W., Montreal, Q

FOURTH YEAR.

Bell, John, H., Kars, O
Blair, George A., Manotick, O
Braithwaite, Ed. E., Unionville, O
Chalmers, William W., Huntingdon, Q
Clerk, Ronzo H., Montreal, Q
Clements, Ben., Berthier en Haut, Q
Dalpé, W. H., Roxton Pond, Q
Evans. W. Herbert, Montreal, Q
Fyles, Wm. A., South Quebec, Q
Hargrave, Isaac L., High Bluff, Man.
Hibbard, Fred. W., Frelighsburgh, Q
Holden, E De F., St. Armand Centre, Q
Livingstone, Colin H., St. John, N.B.
MacDougall, John, Ormstown, Q
McOuat, John W., Inkerman, O
McRae, Duncan A., Applehill, O
McWilliams, Andrew, Ulster, O
O'Sullivan, R. Ben., Jamaica, W.I.
Patterson, William, Ormstown, Q
Pedley, Francis, Cobourg, O
Ritchie, Phillip E., Montreal, Q
Roberts, W. D., Montreal, Q
Sparling, William, Stafford, O
Swabey, Charles, Charlottetown, P.E.I.
Topp, Francis, Granby, Q
Wallace, William E., Montreal, Q
Yates, Nelson P., Frelighsburgh, Q

Partial and Occasional.

Bell, W. J., Creemore, O
Berwick, George A., Farnham, Q
Burns, S. S., Navan
Charters. F., Montreal, Q
Davey, Frank, Montreal, Q
Duhamel, Montreal, Q
Dunlop, J. H., Montreal, Q
Doutre, E. F., Montreal, Q
Francesco, C. B., Montreal, Q
Garth, W. H., Montreal, Q
Hamilton, G. M., Dundela, O
Hart, J. O., Montreal, Q

Hay, W.		Lods, Albert,	Ottawa, O
Hood, Thos.,	Montreal, Q	McLeod, Alexander,	Embro', O
Jamieson, D. M.,	Clapham, Q	McKenzie, Murdoch,	Montreal, Q
Jamieson, W. J.,	Clapham, Q	Meek, Henry A.,	Franklin Centre, Q
Johnson, W. M.		Stephens, George W.,	Montreal, Q
McAdie, James C.,	Montreal, Q	Truax, A.,	Ruthven, O
McCaskill, E. D,	Montreal, Q	Balfour, D.,	Omemee, O
McGregor, A.,	Montreal, Q	Cayer, P. N,	Montreal, Q
McLeod, A.		Eagleson, J. S.,	Hazledean
McLeod, J. W.,	Kirkhill, O	Harris, Th. S.,	Portage du Fort, Q
MacVicar, Donald,	Strathroy, Ont	Harrison, S. E.,	Georgetown, Q
Mills, S. A,	Wakefield, Q	Henderson, A.,	L'Amable
Parent,	Montreal, Q	Light, J. L.	
Russell, A.,	Bristol, Q	Mounteer, H. V.,	Wesleyville, O
Vessot, C.,	Egyte de Milton, Q	Scott, C. S.,	Toronto, O
Warden, W.,	Montreal, Q	Smith, R,	Rawdon, Q
Wood, M.,	Montreal, Q	Whyte, George,	Montreal, Q
Baldwin, C. D.,	Montreal, Q	Birks, Wm. M.	
Bartley, Thos. E.,	Montreal, Q	Cooke, Joseph S.,	Montreal, Q
Brooks, W. M.		Graham, John, B. A.,	Ormstown, Q
Coté, J. E.,	St. Césaire, Q	Henderson, Robert	
Harris, Wm.,	Montreal, Q	Irvine, Henry,	Montreal, Q
Hart, Henry S,	Montreal, Q	McLean, James A.,	South Finch, Q
Hastings, C. J.,	Sweetsburg, Q	McIlraith, J. S.,	Tattock, O
Hunt, G. S.,	Ingoldsby, O	MacVicar, J. Harvey, B.A.,	Montreal, Q
Kerruish, T. L,	Hamilton, O	Shaw, Edward A,	Montreal, Q
Lebeau, A. J.		Thompson, G. J. A., (B.A.),	Harbor Grace, Nfld.
Leath, Louis N.			
Lockhart, Robt., C. E.,	Ormstown, Q	Unsworth, J. K., (B.A.),	Georgetown, Q

SPECIAL COURSE FOR WOMEN.

Undergraduates.

FIRST YEAR.

Abbott, Maude D.,	Montreal, Q	Stevenson, Mildred,	Montreal, Q
Henderson, Mary A.,	Montreal, Q		

SECOND YEAR.

Cross, Eliza C.,	Lachine, Q	Palmer, Jane V.,	Ottawa, O
Evans, Blanche B.,	Montreal, Q	Murphy, Martha,	Montreal, Q
McFee, Donalda,	Montreal, Q	Reid, Helen R. Y.,	Montreal, Q
McLea, Rosalie McD.,	Montreal, Q	Ritchie, Octavia,	Montreal, Q
Murray, Alice,	Montreal, Q	Simpson, Mary C.,	Montreal, Q

Partial.

Evans, Mabel,	Montreal, Q	Blackader, Helen B.,	Montreal, Q
Graham, Ada,	Montreal, Q	Robinson, J.,	Montreal, Q
Scott, Anna G,	Montreal, Q	Turner, Edith,	Montreal, Q
White, Agnes E.,	Montreal, Q	Van Horne, Addie,	Montreal, Q

Occasional.

Alexander, Victoria A.,	Montreal, Q	Redpath, Amy	Montreal, Q
Atkinson, S. G.,	Montreal, Q	Rickaby, Ida,	Montreal, Q
Badgley, Emily,	Montreal, Q	Simpson, Mrs.,	Montreal, Q
Binmore, L. J.,	Montreal, Q	Sinclair, J. H.,	Montreal, Q
Bott, Katharine,	Montreal, Q	Trenholme, Lucy H.,	Montreal Q
Bryson, Grace,	Montreal, Q	Ward, Annie L.,	Montreal, Q
Campbell, Maud,	Montreal, Q	Bagg, A. L.,	Montreal, Q
Edward, M. Grace,	Montreal, Q	Darey, H.,	Montreal, Q
Jack, Edith,	Montreal, Q	Johnson, E. L.,	Montreal, Q
Johnson, A. N.,	Montreal, Q	Johnson, H. L. C.,	Montreal, Q
Kirkham, M.,	Montreal, Q	Macfarlane, J. J.,	Montreal, Q
Dawson, E.,	Montreal, Q	Smith, Annie,	Montreal, Q
McBratney, Jessie,	Montreal, Q	Swabey, Ida,	Charlottetown, P.E.I.
Morgan, E. M.,	Montreal, Q	Swabey, Lilly,	Charlottetown, P.E.I.
Norman, Charlotte,	Montreal, Q	Walsh, A. Maude,	Montreal, Q

MORRIN COLLEGE, QUEBEC.

Undergraduates.

Macleod, Euphemia,	Quebec	Ross, Harrison,	Quebec
Fergusson, Kate Anderson,	Quebec	Thomson, John,	Quebec
Sloane, Edith Jane,	Quebec	Crawford, Archibald,	Quebec
Addie, Mary Alice,	Point Levi	Thompson, Frederick Ernest,	Quebec
Lamont, John,	Marsden, P.Q.	Robertson, Adam,	Edinburgh, Scotland
Rivard, Alfred Eli,	Montreal, Q	Miller, Alfred Paul,	Quebec
Michie, George Walter,	Quebec	Down, John,	Quebec
Anderson, Duncan Peter,	Point Levi	Macdonald, Malcolm Stewart,	Scotstown
Whitelaw, James Menzies,	Valcartier	Rivard, Edward Samuel,	Montreal
McDonald, Simon,	Quebec	Laurie, Archibald,	Quebec

ST. FRANCIS COLLEGE, RICHMOND, P.Q.

Undergraduates.

Jones, Arthur,	Richmond	Parker, John,	Leeds, P.Q

FACULTY OF APPLIED SCIENCE.

FIRST YEAR.

Bertrand, J. T.,	Isle Verte, Q	McFarlane, M. C.,	Almonte, O
Campbell, K. C.,	Montreal, Q	McKenzie, C. P.,	Danville, Q
Edwards, G. M,	Montreal, Q	Thompson,	Montreal, Q
Hersey, M. L.,	Montreal, Q	Warren, J. S.,	Brooklin, O
MacFarlane, W. D.,	Cote St. Antoine, Q	Waters, A. W.,	Montreal, Q
McFarlane, A. G.,	Almonte, O	Young, A.,	Almonte, O

1885-6

SECOND YEAR.

Carmichael, W. J.,	Longueuil, Q.	May, J. E.,	Ottawa, O.
Childs, A. E.,	Montreal, Q.	Macnutt, C. H.,	Ottawa, O.
Drummond, A. L.,	Montreal, Q.	McLennan, M. J.,	Williamstown, O.
Eneas, A. G.,	Montreal, Q.	McTaggart, N. B.,	Montreal, Q.
Green, C.,	Newboro, O.	Ogilvy, R. F.,	Montreal, Q.
Hamilton, W. J.,	Montreal, Q.	Prieur,	Valleyfield, Q.
Hislop, J.,	Strasburg, Q.	Trembley, A. J.,	St. Roch des Aulnets, Q.
Hopkins, M. W.,	Stoney Creek, O.	Walters, C. L.,	Montreal, Q.
Lovelace, E. S. M.,	Longueuil, Q.		

THIRD YEAR.

Ball, J. P.,	Charlottetown, P.E.I.	Palmer, R. E.,	Charlottetown, P.E.I.
Carlyle, W. A.,	Woodstock, O.	Rinfret, R.,	St. Stanislas de Batiscan, Q.
Ferrier, W. F.,	Montreal, Q.	Taylor, D.,	Waterloo, O.
Forneret, V. F. W.,	Berthierville, Q.		

FOURTH YEAR.

Brown, C. P.,	Montreal, Q.	Reid, W. M.,	Montreal, Q.
Cowie, F. W.,	Caledonia, O.	Saunders, B. J.,	Farmersville, Q.
Dawson, S. H.,	Quebec, Q.	Trueman, H.,	Truemanville, N.S.
Evans, N. N.,	Montreal, Q.	Weir, A.,	Montreal, Q.
Kerry, J. G. G.,	Montreal, Q.		

Partial.

Blomeley, A. F.,	Montreal, Q.	Pitcher, S. H.,	Barbadoes, W. Indies.
McCarthy, J.,	Sorel, Q.		

SUMMARY.

Students in Law, McGill College		33
" in Medicine "		237
" in Arts "	Undergraduates	103
	Partial and Occasional	68
Special Course for Women—		
	Undergraduates	13
	Partial	8
	Occasional	30
" in Applied Science,	Undergraduates	45
	Occasional	3
" in Arts, Morrin College, Undergraduates		20
" " St. Francis College, Undergraduates		2
Total number of Students		532
Deduct entered in two Faculties		6
		526
Teachers-in-training in Normal School		77
Pupils in Model Schools		385
Total Students and Pupils		988

Higher Examination of Women.

SENIOR ASSOCIATES IN ARTS.

1880.

GEORGINA HUNTER, MONTREAL.

1881.

MARGUERITA FRANCIS, MONTREAL.

1885.

AGNES E. LIVINGSTONE, ST. JOHN, N.B.

School Certificates of the University.

ASSOCIATES IN ARTS.

1865.

Montgomery Jones
John Ferguson
Charles Cushing
Robert H. Conroy
Samuel Stevenson
Wallace Clarke
Frederick W. Evans
Robert W. Forrester
Edward B. Greenshields
Montgomerie Lewis
George Joseph Bull
Albert Murray
Daniel McLachlan

1866.

Sidney Arthur Fisher
Charles E. Porteous
Will. W. Walkem
Chas. G. Stewart
Geoffrey W. Porteous
Florence David
Hew D. Whitney
George W. Torrance
Robt. M. Esdaile

1867.

Charles H. Ferry
James Rodger

1867.—*Continued.*

Geoffrey W. Porteous
Thomas C. Thompson
Francis J. Shepherd
Gerald Lloyd

1868.

John Fraser Torrance
Will. Osborne M. Cross
Henry G. W. Badgley
John B. Abbott
John Gray Grant
Thomas C. Hempstead

1869.

Arthur F. Ritchie
Simon J. Tunstall
Charles R. Jones
O'Hara Baynes
Aaron D. M. DeSola
Charles Jas. Fleet
John Thos. Caldwell
James M. Mitchell
John Kay
James Green

1870.

William Bell Dawson

1870.—*Continued.*

Archibald D. Taylor
Hiram B. Stephens
Henry W. Thomas
Samuel Greenshields
Sheringham A. Shepherd
William McEachran
David S. Robertson

1875.

William D. Lighthall
W. A. Farwell
Robert T. B. Howard
Charles A. Molson

1876.

J. Herbert Darey
Paul Theodore Lafleur
Edwin Hudson Bisset
Andrew G. Ross
James R. Foster
Frederick Mindon Cole
William Dawson McGregor
John Ewart
J. Gordon Gibson
Wilfred T. Skaife
Charles J. Walker

1877.

Alexander Falconer
Thomas B. Macaulay
Armand F. Teefy
Mina Douglas
M. Stuart Fraser
William Martin
Walter H. Snow
Louisa McFee
Margaret A. Mills
Ida Papineau
Walter E. Lyman
Helen Macklen
Jane Darling
George Graham
Murray A. Biggar
Jessie Ross
Eva Dawson
Alice Cumming
Kenneth R. Macpherson
Walter H. Lancey
Robert A. Wallace
Alexander McGibbon
Marietta Jones
Frank Weir
Nathaniel D. Drew

1878.

Henri A. Lafleur
Grace Darling
Henry R. Fairclough
Andrew Lawson
William H. Boyle
N. J. Rielle
George Kapelle
John B. Rose
Lillian Martin
Henry Cockfield
Louisa Harrison
David Young
Lawrence C. Rose
Jessie Radford
Kate McKeand
Maggie Stewart
Maggie Campbell
A. W. Martin
Florence W. Bissett
C. W. Trenholme
Robert Stirling
Maggie White
Frederick E. Belcher
Anna Baxter
Minnie Greenshields
Emma D. Meikle
C. D. Godfrey
Lawrence MacRae
Neil McLennan

1879.

James Charles Allan
Charles Edward Bland
George W. Hambly
John C. Fields
B. Norman Hudspeth
Louisa McDonald
Wyatt G. Johnston
Robert Little
Henry J. H. Petry
Edward J. K. Noyes
Edith Durdan
Adolph Craft
Richard F. Morris
William Morris
Duncan D. McTaggart
Archibald McK. McMechan
Donald John Fraser
John Coutts
Thomas Crawford
Jessie McConnell
Devereux Emmet
Alfred E. A. Barlow
Elizabeth Smith
Claude L. Wheeler
Charles McP. Holt

1879.—*Continued.*

Maggie Osgood
George S. Baker
Arthur G. Weld
William L. Murray
Christina J. Galt
George R. Mill
Alexander Malcomson
Thomas J. Tait
Kenneth D. Young
Albert W. Haldimand

1880.

Edward H. P. Blackader
William Logan
Mary J. MacCallum
Walter H. Turner
Minnie H. McKean
Mary B. Badenach
Wm. C. Morrison
Robert C. Kirkpatrick
Julius T. Gnaedinger
Richard S. Kinghorn
Jean W. Johnston
Norman R. Macaulay
Hugh McLennan
William Cherrie
Eugene McMullan
Elena C. Livingston
William Christie
James B. McNaughton
Lyman Duff
John D. Courtney
Maud M. Lamb
William Gibson
James B. Gibson
Frank Baker

1881.

Frank P. Bernard
Charles R. Daoust
Frederick L. Barlow
Percy E. Judge
Peter C. Mitchell
Alexander J. Tolmie
William Mitchell
Edward P. Mathewson
Henry Munderloh
Ellen E. Coo
Wilfred R. Morris
John J. Arnton
Hanbury A. Budden
Manson D. Teetzel
William T. Gunn
George H. Guy
Charles Burkholder
William M. Reid
Philip M. Robertson
Percival Tibbs
William Reid
Ellen F. Kemp
Grace Foster
Alice M. Cook
James W. Morrice
Ridley L. Charlton
James H. Bissett
Andrew Stuart
Mary E. Clunie
Archibald Robertson
Arthur H. Irwin

1882.

Albert G. B. Claxton
Philip E. Ritchie
Alexander R. Johnson
John G. G. Kerry
William S. Leslie
Nevil N. Evans
Charles P. Brown
Walter F. Ferrier
Thomas J. Vipond
Charles J. Robertson
William H. Evans
John T. Crawford
Robert S. Ross
Ronzo H. Clerk
Arthur Weir
William A. Home
Adelaide M. Bastable
James R. Kinghorn
Frederick H. Johnson
Orrin Rexford
Leslie G. Craig
Marion Taylor
Flora Taylor
William Hilton
Cecil M. Maxwell
Ernest Munro
Brain H. Wand
William A. Logie
William A. Fyles
Mary H. Ellicott
Harriet A. Darey
Mary J. Metcalfe
Emily F. Gross
William H. Bentley
Ernest L. Allard
Florence N. Wilson
George H. Dawson
James Laurie
Elizabeth Christie
Elizabeth Donnelly
Alice M. Wilson
Laura M. McLaren

1882.—*Continued.*

Mary E. Meikle
Christina Wilson
James H. Woods
Phoebe E. Elliott
Ida F. Smith
Jane M. Bremner.

1883.

Meredith O. Smith
Wellington A. Cameron
Hugh M. Patton
Annie C. McGregor
Hubert D. Hamilton
Henry W. Welch
Rowland S. Hill
Joseph C. Barlow
Ellen M. Clunie
Arthur D. Fry
Albert H. Campbell
Alexander T. Galt
Albert E. Holt
Alfred P. Murray
Geo. A. Clunie
Howard D. Kemp
Samuel Cummings
Wm. J. Carmichael
Charles B. Kingston
Helen B. Blackader
Mabel Aldrich
Charles L. Walters
Robert B. Henderson
Henry G. McLaren
Wm. A. Nichols
Edith Turner
Alexander McLennan
Geo. S. Cantlie
Lawrence A. Darey
Andrew B. Clark
Peter Reid
Neil B. McTaggart
Mattie C. Murphy
Alfred P. Bryson
Graham B. Macpherson
Ada A. McGowan
Thomas R. Henderson
Robert M. Campbell

1884.

Rosaline McD. McLea
Octavia G. Ritchie
John L. Day
Charles R. Hamilton
Henri G. Joly
James E. LeRossignol
Charles B. Gordon
Charles J. F. Martin
Helen R. Y. Reid
Wm. C. G. Heneker
Edward A. Robertson
Mary E. E. Hunt
Charles C. Smith
Alice J. Murray
Jessie W. Stewart
F. H. Pickel
George R. Kinloch
Emily C. Forbes
W. Archibald H. Kerr
George Lyman
Alexander M. Jeffrey
Lillias S. Molson
Hattie W. Bennett
John Paterson
Robert H. Reid
Edmund H. Duval
Walter L. Jamieson
Reginald D. Dyer

1885.

George M. Edwards
William Robertson
Ada V. Alexander
Walter Binmore
Frank S. Meighen
Harold B. D. Campbell
David Grant
Maude E. Abbott
John W. Ross
David D. J. White
Mabel N. Evans
Edgar A. Grafton
Elizabeth M. Cochrane
Caroline R. Marshall
Ellen M. H. Stevens
Kate M. Bott
Alexander W. Walters
William M. Birks
Victor C. Buchanan
Minnie M. Howe
Clara F. M. Davidson
Walter D. Macfarlane
Thos. R. McInnes
Mary H. Henderson
Maude S. Gibsone
Robert H. Berwick
Janie T. Black
Eleanor McD. Campbell
John H. Dunlop
Annie M. Kyle

JUNIOR CERTIFICATES.

1875.

Charles F. Dawson
William C. Norris
William S. Kerry
Frank D. Adams

1876.

William R. Robertson

1877.

Annie Cusack
Lizzie Cox
Ella Gardiner
Elizabeth Monk
Jessie Logan
Alexander W. Richardson

1878.

George Ross
David McKinnon
Jane Wood
Annie Troup
Jennie Edgar
Edwin W. Griffin
Mary Troup
Herbert R. Macaulay
Jessie Stewart
Alexander Ambrose
Milton Vandewater
Mulie Somerville
Jaggie Osgood
Fritz G. Gnaedinger
Robert A. Elliott
Dora Scott
Frederick F. Kingston
William H. Adams.

1879.

Margaret McCoy
Ida Sutherland
Hattie Dally
Grace Darling
Margaret Wilson
Augusta Pederson
George Corey Thomson
Georgina Iles
Mary Mitchell
Arthur Mercer

1880.

Jessie S. Greenshields
William Graham
Bertha Savage
Ellie M. Cole
David Ogilvie
Jeannie Ross
Lorrie Dickson

1881.

Annie B. Barr
Agnes H. Fairbairn
John S. Cassils
Martha Martin
Mary C. Greer
Jeannie Dickson
Ernest Allard
Nellie Hall
Henry Allen
J. W. H. Milne

1882.

Cora Comfort
William F. Graham
Annie Munro
Daniel Taylor

1883.

John Coon
Albert E. Botterell
Annie Murphy
E. Herbert Stafford
Lucie E. Ives

1884.

Francis H. Hadley
Arthur L. Crawford
Alexander F. Mitchell
Frederick A. Stabb
Minnie M. Howe

1885.

Isabel M. M. Campbell
Margaret Murchie

STANDING IN THE EXAMINATIONS, 1886.

ASSOCIATES IN ARTS.

No.			
8.	Annie Williams (Girls' High School, Montreal),	1212	Marks.
9.	Albert G. Nicholls (High School, Montreal),	1153	"
25.	Albert F. Winn (High School, Montreal),	1093	"
18.	Percy N. Evans (High School, Montreal),	1076	"
10.	A. Armour Robertson (High School, Montreal),	1059	"
7.	Sara B. Scott (Girls' High School, Montreal),	1014	"
11.	Thomas B. Reed (High School, Montreal),	1007	"
13.	Hugh M. Kinghorn (High School, Montreal),	978	"
22.	James B. Mitchell (High School, Montreal),	966	"
31.	Inez H. R. Botterell (Private Tuition),	937	"
21.	George W. Mooney (High School, Montreal),	932	"
19.	Sydney L. N. Ussher (High School, Montreal),	917	"
20.	Edward C. Trenholme (High School, Montreal),	904	"
30.	Jeannie T. Botterell (Private Tuition),	896	"
12.	Peers M. Davidson (High School, Montreal),	892	"
17.	Harry R. Jamieson (High School, Montreal),	889	"
4.	M. Mira Macfarlane (Girls' High School, Montreal),	888	"
14.	Frederick M. Fry (High School, Montreal),	875	"
27.	Henry Lemesurier (Bishop's College School, Lennoxville),	858	"
24.	Arthur J. Whitham (High School, Montreal),	817	"
16.	George H. Mathewson (High School, Montreal),	806	"
5.	Lizzie B. McGregor (Girls' High School, Montreal),	787	"
34.	Levi Moore (Lachute Academy),	761	"
3.	Helen R. Day (Girls' High School, Montreal),	752	"
15.	Walter E. Cushing (High School, Montreal),	731	"
23.	William Monk (High School, Montreal),	725	"
29.	Gerald F. Hibbard (Bishop's College School, Lennoxville),	648	"
2.	Mary E. Bond (Girls' High School, Montreal),	646	"
33.	Persis J. Lothrop (Young Ladies' Academy, Sherbrooke),	640	"
32.	Florence B. Pangman (Misses Symmers & Smith's School),	624	"
28.	Frederick A. Fothergill (Bishop's College School, Lennoxville),	621	"

STANDING IN THE SEVERALSUBJECTS.

[The numbers correspond with those in the preceding list. Candidates whose numbers are in parentheses are equal in standing.]

I. *Preliminary.*

Reading.—[At Montreal.—(19, 30, 31, 8), (2, 3, 18), (9, 11), (1, 21), (13, 14, 32), (12, 15, 26), 20, (5, 10, 22), 6, 7, 16, 24), (4, 17, 23), 25]. [At Lennoxville.—33, (27, 28), 29]. [At Lachute.—34].

Dictation.—(15, 32), 9, (7, 8, 13, 14, 16, 18, 20, 31, 32), (24, 25), (1, 3, 10, 11, 17, 26, 27, 33), 2, (4, 19, 21, 28, 29), (6, 12, 23), 30, 5.

English Grammar.—14, (7, 20), (16, 18, 21, 22, 25), (3, 5, 9, 10, 11), (2, 4, 32), (8, 12, 13, 19 24, 30), (1, 31), (6, 26), 29, (33, 34), (15, 17), 23, 27, 28.

Arithmetic.—8, 22, (10, 18, 25), 33, (11, 17), 27, 12, 26, (9, 21), 2, 31, (5, 13), 14, (19, 20), (4, 7), 24, (30, 34), 15, (23, 29), 16, 3, 32, 28.

Geography.—29, (27, 30), 9, (7, 8, 20, 24, 28, 31), (25, 33), (11, 34), 32, 10, (4, 16), 14, (15, 21), (3, 5, 17, 18, 19), (2, 12, 13), 26, (6, 22), 23.

British and Canadian History.—(8, 9), 10, 7, (1, 30), 13, (11, 12, 14, 16, 18), (17, 32), (21, 25), (4, 19, 34), (20, 24), 28, (27, 31) 29, 22, (23, 26), 15, (3, 33), (5, 6), 2.

Gospels.—[Creditable answering].—1, 2, 4, 8, 9, 10, 32.

II. *Optional.*

[The asterisks indicate creditable answering].

Latin.—8*, 9*, (10*, 14*), 16*, 7*, 11*, 20*, 13, 12, (30, 31, 34), 15, 22, 27, 33, 28, 29.

Greek.—14*, 11*, 9, 13, 10, 12, 20, 16, 34, 27, 15.

French.—8*, 31*, 32*, 1*, 18*, (11*, 13*, 27*), 9*, (10*, 22*), 25*, 3*, 2, (5, 12, 30), (4, 7), 15, 6, 14, 19, 20, 16, 28, (21, 33), 17, 24, 23, 34, 29.

German.—31*, 18*, (1*, 25*), 30*, (5*, 19*), 4*, 2*, (6*, 17*), 21*, 26*, 3, 24, 23.

Geometry.—(10*, 13*, 20*, 25*), 8*, 18*, 9*, (7*, 22*), (21*, 31*, 34*), (11*, 17*), 12*, 30*, 27*, 5*, 19*, 33*, 15*, 23, (26, 29), 14, 28, (4, 16), 24, 32, 2.

Algebra.—8*, 18*, 25*, 9*, 22*, 21*, 17*, 26*, 31*, (12*, 30*), (5*, 27*), (11*, 33*), 29*, 23, (4, 14), 19, (10, 13), 3, 7, (20, 34), 28, 24, (2, 32), 15, 16.

Trigonometry.—10*, (21*, 25*), 18*, (9*, 22*) 8*, 17*, 19, 12, 13, 11, 4, 24, 23, 20, (3, 7, 26).

Drawing.—18*, 8*, 22, 25, 26, 7, 17, 19, 23, 3, 5, 21, 1, 31, (4, 24).

English Language.—8*, 1*, 7*, 3, 4, 5, 32, 2, 19, 6, 20.

English Literature.—9*, 32*, (1*, 7*), 8*, (11*, 12*, 24*, 30*), 20*, 13*, (10*, 16*), 26*, 3, 14, (2, 31), 34, 6, (4, 25), (18, 19, 21, 22), 33, (15, 29), 27, 5, 23, 17, 28.

History.—9*, 8*, (1*, 7*), 30*, (13*, 14*), 10*, (16, 23), 12, 11, 24, (20, 21), (22, 31), 4, 19, 32, (27, 29), 28, 25, 18, (17, 26), 15, 34, 33.

Geography.—9*, 27*, 28*, (10*, 25*), 19*, 15*, 26, 24, 16, 11, 14, 34, (13, 17, 22), 18, 23, 29, 21.

Botany.—1*, 8, (3, 4), 25, 7, 5, 18, (2, 30), 32, 22, 19, (17, 24, 31).

Chemistry.—18*, 25*, 19, 22, 21, 26, 17, 24, 1, 3.

DONATIONS

TO THE

LIBRARY AND MUSEUM OF McGILL COLLEGE,

FROM JUNE, 1885, TO MAY, 1886.

DONATIONS TO THE LIBRARY.

FROM	TO THE LIBRARY.
Geological and Natural History Survey, Ottawa	Report of Progress, 1882, '83, '84, 1 volume, and Catalogue of Canadian Plants, 1 vol.
Dominion Government, Ottawa	General Report Census of Canada, 1880-81, vol. IV., 1 vol., & Sessions Papers, vol. XVIII., parts 1 to 4, 4 vols.
Provincial Government, Quebec	Statutes of Quebec, 1 vol. Sessional Papers, 2 vols. Journals of the Legislative Council, 1 vol., and Journals of the Legislative Assembly, 1 vol.
Senatus Academicus, Edinburgh	The Edinburgh University Calendar, Edinburgh, 1885, 1 vol.
Senatus Academicus, Glasgow	The Glasgow University Calendar, Glasgow, 1885, 1 vol.
United States Government	Conference Internationale, Meridien unique, Washington, 1884, 1 vol.
	Two volumes newspaper clippings, 1836-37 and 38, 2 vols.
	Prior's Life of the Hon. E. Burke, 1 vol.
	Coke's Law Reports, 13 parts bound in 7 vols.
	Maxwell's Life of Wellington, 3 vols.
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Institute of Civil Engineers, London	Minutes of Proceeding, vols. LXXX-I., 2 vols. and Charter and By-Laws, 1 vol.
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Royal Colonial Institute, London	Proceedings of, vol. 18, 1884-85, 1 vol.
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Lords Commissioners Her Majesty's Treasury, London	Scientific Results, Voyage H. M. S. "Challenger," Botany, vol. I., 1 vol.
Nova Scotia Historical Society	Collections of, for the year 1884, 1 vol.

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Zoological Society, London	Transactions and Proceedings of, London, 1885, 2 vols.
Royal Society, Dublin	Transactions and Proceedings, Dublin, 2 vols.
Royal Institution	British Architects, Transactions of, vol. I., new series, London, 1885, 1 vol.
R. A. Ramsay, Esq., Montreal	Malloch, The New Republic, 1 vol. The Year Book of Canada, 1871-72, 1 vol.
Minister of Public Instruction, Paris	Sixteen Works upon Primary Instruction in France, 16 vols.
United States Government, Washington	Astronomical Observations from the year 1876 to 1880, 6 vols.
Dominion Government, Ottawa	Sessional Papers, vol. XVIII., 12 parts. Journals of the Senate, vol. XIX.
Institute Civil Engineers, London	Transactions of the, vol. XXXII., London, 1885.
Am. Soc. Mechanical Engineers, New York	Transactions of, vol. VI., New York, 1885.
Sir J. William Dawson	Egypt and Syria, London, 1885
Charles Glackmeyer, Esq	Annual Civic Reports of the City of Montreal, for 1884.
Geol. and Nat. History Survey of Canada	Contributions to Canadian Palæontology, vol. I., part I.
W. A. Ingham, Esq., Philadelphia	Grand Atlas, Vol. I., Part II. Do Vol. IV., Part I. Do Vol. V., Part I. } Folio.
Birmingham Philosophical Society	Proceedings of the, Vol. IV., Part II., Session of 1885.
Lords Commissioners of Her Majesty's Treasury London	Scientific Results, Voyage of H. M. S. "Challenger," Zoology, vol. XII , London, 1885. 4to.
Dominion Government	Statutes, 1884-85.
U. S. Government, Washington	Census 1881, Mortality and Vital Statistics, 1885, Do Statistics of the Precious Metals
The Earl of Roose	Scientific Transactions of the Royal Dublin Society, vol. III., sec. 2, Parts VII and IX., Dublin, 1885.
Institution of Engineers, Glasgow	Transactions of, vol. XXVIII., for 1884-85. Glasgow, 1885. 8vo.
Hon. J. S. C. Wurtele, M.P.P., Quebec	Manual of the Legislative Assembly, Quebec, 1885.
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	Do Delaware, Part I., Harrisburg, 1885.
	The Geology of Huntingdon County, Harrisburg, 1885.
Trustees British Museum	Catalogue of Lizards, and Ed., vol. II., London, 1885
Royal Observatory, London	Greenwich Observations for 1883. London, 1885.
H. Kato, Tokio, Japan	Abhandhengen des Tokia Diagako, Tokio, 1884.
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The Institute of Civil Engineers, London	Volume 83, Part I, Transactions of the Institution for 1885-86.
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McGill Normal School.

1886-87.

Government of the School.

Under the Regulations for the establishment of Normal Schools in the Province of Quebec, the Superintendent of Public Instruction is empowered to associate with himself for the direction of one of these Schools the Corporation of McGill University, Montreal. In accordance with this arrangement the Provincial Protestant Normal School is affiliated with the McGill University, and the following members of the Corporation of the University constitute the Committee of the Normal School for the Session of 1886-87.

NORMAL SCHOOL COMMITTEE.

Sir Wm. Dawson, LL.D., F.R.S., Vice-Chancellor of the University, *Chairman*.

Hon. James Ferrier, Senator.
Hon. F. W. Torrance, M.A, B.C.L., } Governors of McGill College.

Rev. George Cornish, LL.D.,
J. R. Dougall, M.A., } Fellows of McGill University.

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OFFICERS OF INSTRUCTION.

McGILL NORMAL SCHOOL.

Emeritus Principal and Associate Professor :

WILLIAM HENRY HICKS, ESQ.

SAMPSON PAUL ROBINS, M.A., LL.D., *Principal and Ordinary Professor of English Language and Literature, and Lecturer on Art of Teaching and Natural Science.*

JAMES MCGREGOR, M.A., LL.D., *Ordinary Professor of Mathematics and Instructor in Classics.*

——— ——— *Professor of French.*

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MISS ROBINS, *Assistant to the Principal.*

MODEL SCHOOLS OF THE McGILL NORMAL SCHOOL.

MR. GEORGE PARMELEE, *Head Master of Boys' School.*
MISS JANE A. SWALLOW, *Head Mistress of Girls' School.*
MISS LUCY H. DERICK, *Head Mistress of Primary School.*

ANNOUNCEMENT FOR THE SESSION 1886-87.

This institution is intended to give a thorough training to teachers, especially for the Protestant population of the Province of Quebec. This end is attained by instruction and training in the Normal School itself, and by practice in the Model Schools ; and the arrangements are of such a character as to afford the greatest possible facilities to Students from all parts of the Province.

The thirty-first Session of this school will commence on the first of September, 1886, and close on the thirty-first of May, 1887. The complete course of study extends over three years, and the students are graded as follows :—

1. *Elementary School Class.*—Studying for the Elementary School Diploma.
2. *Model School Class.*—Studying for the Model School Diploma.
3. *Academy Class.*—Studying for the Academy Diploma.

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1. Conditions of Admission and of Obtaining Diplomas.

Candidates for admission into the Elementary School Class will be required to pass an examination in Reading, Writing, the elements of Grammar, Arithmetic and Geography; and to produce the certificate and sign the application referred to in Articles 1 and 2 of the Regulations. Admission into each of the higher classes requires a knowledge of the subjects of the previous one.

Those admitted to the Elementary School Class at the beginning of the Session must be able to parse correctly a simple English sentence; must know the continents, greater islands, peninsulas, and mountains, the oceans, seas, larger gulfs, bays, straits, lakes and rivers, and the chief political divisions and most important cities of the world, must write neatly a dictation from any school reader, with no more than five per cent. of mistakes in spelling, in the use of capitals and in the division of words into syllables; and must be able to work correctly examples in the simple rules of Arithmetic and in fractions.

Associates in Arts of the University, of the requisite age, may be admitted into the Elementary School Class, and, provided that they have passed in Geometry Algebra and French, into the Model School Class, without examination.

In the examinations for entrance into the Academy Class, the Principal may allow exemptions to Associates in Arts for the subjects in which at the examinations for that certificate they have passed with credit.

Each Student must produce a certificate of good moral character from the clergyman or minister of religion under whose charge he has last been, and also testimony that he has attained the age of six-

teen years. He will also be required to sign a pledge to teach for three years in some public school in the Province of Quebec.

Candidates for admission will be furnished with forms of application on communicating with the Principal of the School.

There will be a Semi-sessional Examination at Christmas, which all Students are required to pass in order to continue in the Classes.

At the close of the first year of study Students may apply for examination for diplomas giving the right to teach in Elementary Schools ; and after two years' study, or if found qualified at the close of the first year, they will, on examination, be entitled to diplomas as teachers of Model Schools.

Students having passed the examination for the Model School Diploma, with creditable marks in Classics and Mathematics, or having otherwise advanced to the requisite knowledge, may go on to the Academy Class, and, on examination, may obtain the Academy Diploma.

Students are expected to give their whole time and attention to the work of the School, and are not permitted to engage in any other course of study or business during the sessions of the School.

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2. Privileges of Students.

On complying with the above conditions, all Students will be recognized as *Teachers-in-training*, and as such will be entitled to free tuition, and to bursaries in aid of their board and of the cost of text books, not exceeding $36.00 per annum in the two first Classes, nor $80.00 in the Academy Class, should they be successful in obtaining the diploma at the final examination. A portion of this allowance will be advanced to such Students as are not resident in Montreal, on their passing the semi-sessional examination.

Under the regulations subjoined, and with the view of extending the benefits of the School to all parts of the country, those who reside at a distance of more than ninety miles from the city of Montreal will also be entitled to a small allowance for travelling expenses, proportionate to the distance.

Students resident in Montreal may share in the Bursary Fund, on producing certificates from their ministers or clergymen that such aid is absolutely necessary to their continuing in attendance at the School.

In addition to religious instruction of a general Protestant character by the Professors, arrangements will be made for special religious instruction by ministers representing the several denominations with which the Students may be connected.

No boarding-house is attached to the institution, but every care will be taken to ensure the comfort and good conduct of the Students in private boarding-houses approved by the Principal. Board can be obtained at from $12 to $16 per month.

The J. C. Wilson Prize of $40 and a Book, contributed by him as a former Student of the School, will be offered for competition to the candidates for the Elementary Diploma, and will be given for the highest aggregate number of marks.

The Prince of Wales Medal and *Prize* will be given to the student taking the highest place in the Model School Class, provided that such student shall attain to the standard fixed by the Regulation of the Council of Public Instruction for this Medal.

The Marquis of Lansdowne Medal will be given to the student taking the highest place in the Academy class.

It has been resolved by the McGill and Bishop's Universities and by St Francis College, Richmond, to accept the Academy course in the Normal School as the equivalent of the first year in their Faculties of Arts on certain equitable conditions, so that all who have passed satisfactorily through that course are entitled to enter the second year of the courses in Arts without further examination. The McGill University also offers free tuition in the Faculty of Arts in the second year to such students of the Academy Class, not exceeding three in number, as at the final examinations take 75 per cent. of the total marks, with not less than two-thirds of the marks in Latin and in Greek. By authority of the Protestant Committee of the Coun-

cil of Public Instruction, the McGill Normal School is authorized to pay a bursary of $25 to such of its Academy pupils as enter any of the institutions above named under the provisions here cited, provided they do not take a bursary or exemption from fees, in the institution they enter.

All the preceding regulations and privileges apply to female as well as to male students.

Persons holding the degree of B.A. or M.A. of any British or Canadian University may receive the Academy diploma, in accordance with the Regulations of the Protestant Committee of the Council of Public Instruction.

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3. Course of Study.

N.B.—The subjoined Course of Study has been designed, and all instruction in it is given, with express reference to the work of teaching.

1. ELEMENTARY SCHOOL CLASS, STUDYING FOR THE ELEMENTARY SCHOOL DIPLOMA.

With the view of accommodating teachers actually in charge of schools at the commencement of the Session, and whose previous education may enable them to enter at a more advanced period, the course of study in this class is divided into terms, as follows:

First Term, from September 1st to December 3rd.

(*Entrance examination as stated above.*)

English.—The structure of sentences. Orthography and orthoepy. Penmanship. The study of Macaulay's Essay on Milton.

Geography.—General view of continents and oceans. Map of North America.

History.—Outline of general and of sacred history.

Arithmetic.—Simple and compound rules.

Algebra.—The elementary rules.

Geometry.—First Book of Euclid to 20th proposition.

French.—Darey's Principes de Grammaire Française to page 54. Lectures Françaises to page 20.

Chemistry.—Lectures.

Reading and Elocution.

Drawing.—Elements and simple outlines.

Music.—Vocal music with part songs.

SECOND TERM, January 6th to end of Session.

(*No pupils will be received after the commencement of this term. Those who enter must pass the examination of the class in the work detailed above.*)

English.—Structure of words and sentences. Etymology, derivation and syntax. Study of Milton's L'Allegro and Il Penseroso.

Geography.—Contour, elevations, river systems, political divisions and chief cities of South America and the Old World.

History.—England.

Arithmetic.—Fractions and proportion. Properties of numbers. Mensuration.

Algebra.—Simple equations of one unknown quantity with problems.

Geometry.—First book of Euclid with deductions.

Art of Teaching.—Lectures on school architecture, organization and discipline, on school law, and on methods of teaching particular subjects.

French—Grammar continued, including reading, translation, oral and written exercises. Dominion Phrase Book.

Botany.—Lectures.

Reading and Elocution.

Drawing.—Freehand drawing from the solid and map drawing.

Music.—Elements of vocal music and part songs.

Practice in Teaching in the McGill Model Schools and in the St. George's Model School as directed by the Principal.

Religious Instruction will be given throughout the Session.

In addition to the text-books named above, each student of the Elementary School Class must be provided with an English Grammar, an English History, an Atlas of recent date, an Arithmetic, Todhunter's Algebra, and a Euclid.

2. MODEL SCHOOL CLASS, STUDYING FOR THE MODEL SCHOOL DIPLOMA.

Students entering the school in this second year must have passed a satisfactory examination in the subjects of the Elementary School Class, and will be expected to attend the lectures on the Art of Teaching given in that Class. The Class will pursue its studies throughout the Session, without division into terms.

English.—Principles of grammar and composition. Style. History of the English Language. Study of Shakespeare's Tempest, Poe's Sleeper, and Tennyson's Lotos Eaters.

Geography.—Mathematical and physical. Use of the globes.

History.—Greece, Canada.

Art of Teaching.—Lectures on methods of education and school arrangements, including school laws.

Arithmetic.—Commercial arithmetic and bookkeeping. Logarithms.

Algebra.—Equations of more than one unknown quantity, and quadratics.

Geometry.—Second, third and fourth books of Euclid with application to mensuration.

Object Lessons.

Latin.—Elements, as in Bryce's 1st Latin Reader.

Greek.—Optional after Christmas to students sufficiently advanced.

French.—Translation from French into English, and from English into French. Darey, Principes de Grammaire Française, Lectures Françaises, Dominion Phrase Book.

Agricultural Science.—Principles, especially chemical and botanical, and application to Canadian agriculture.

Elocution.

Drawing.—Elements of perspective.

Music.—Instrumental music, part songs, and rudiments of harmony.

Practice in Teaching.—In the McGill Model Schools and in the St. George's Model School as directed by the Principal.

Religious Instruction throughout the Session.

In addition to text-books named above, each student of the Model School Class must be provided with an English Grammar, a History of Canada, a History of Greece, an Arithmetic, a Todhunter's Algebra, a Euclid, and Dawson's Scientific Agriculture.

3. ACADEMY CLASS, STUDYING FOR THE ACADEMY DIPLOMA.

(Students entering this Class must have passed a creditable examination in the subjects preparatory to the Course of Study.)

Logic.—Jevons' Elementary Lessons.

Anglo-Saxon.—Sweet's Primer.

Philology.—Lectures.

Mathematics.—Euclid, definitions of Book V. Book VI: Plane Trigonometry —Galbraith and Haughton.

Latin.—Virgil, Æneid, Book VI., Cicero in Cæcilium, prose composition.

Greek.—Homer Odyssey, Book XXI.

History.—Greece.

French.—Review with the Model School Class.

Elocution.

Drawing.

All pupils of this class who have not previously done so, must attend lectures on the Art of Teaching in the Elementary and Model School Classes. They must teach in the McGill Model Schools as directed by the Principal.

In addition to text-books named above, each student entering the Academy Class must be provided with Greek and Latin Grammars and Dictionaries.

BY-LAWS OF McGILL NORMAL SCHOOL.

(Special Regulations for the admission of Teachers-in-training.)

Article First.—Any person desirous of being admitted as a Teacher-in-training must apply to the Principal of the Normal School, who, on his producing an extract from the Register of Baptisms, or other evidence, showing that he is full sixteen years of age, with the certificate of character and conduct required by the 6th article of the General Rules and Regulations, approved by His Excellency the Governor-General in Council, on the 22nd December, 1856, shall examine the candidate.

If upon his examination it is found that the candidate can read and write sufficiently well, knows the Rudiments of Grammar in his mother tongue, Arithmetic as far as the rule of three inclusively, and has some knowledge of Geography, the Principal shall grant him a certificate.

Article Second.—The candidate having thus obtained the certificate of the Principal, shall then (in the presence of two witnesses, who, with the Principal,

shall countersign the same) sign an application in writing for admission, containing the declaration required by the 23rd general regulation. This shall be forwarded to the Superintendent of Education, together with all the certificates and other documents required, and, if the whole be found correct, the Superintendent shall cause the name of the candidate to be inscribed in the Register, and notice thereof shall be given to the Principal.

Article Third.—The Teachers-in-training shall state the place of their residence; and those who cannot reside with their parents will be permitted to live in boarding-houses, but in such only as shall be specially approved of. No boarding-houses having permission to board male Teachers-in-training will be permitted to receive female Teachers-in-training as boarders, and *vice-versa*.

Article Fourth.—Every Teacher-in-training, on passing the examinations, will be allowed a sum, not exceeding $36,* to assist in paying his board.

Article Fifth.—Every Teacher-in-training residing at a distance of more than ninety miles from the City of Montreal, shall be entitled to receive an allowance for travelling expenses proportionate to the distance, but not to exceed ten dollars *per annum*.

Article Sixth.—The total amount of allowances paid to Teachers-in-training under the foregoing articles shall not exceed $1,333.33 currency, yearly—that being the sum granted for that object; and when the whole of this amount is appropriated, such Teachers-in-training as may apply for admission shall not be entitled to any portion thereof until vacancies shall occur.

(*Special Regulations for Government and Discipline.*)

Article First.—Teachers-in-training guilty of drunkenness, of frequenting taverns, of entering disorderly houses or gambling houses, or keeping company with disorderly persons, or committing any act of immorality or insubordination, shall be expelled.

Article Second.—There shall be no intercourse between the male and female Teachers-in-training while in School, or when going to, or returning from it. Teachers of one sex are strictly prohibited from visiting those of the other.

Article Third.—They are on no account to be absent from their lodgings after half-past nine o'clock in the evening.

Article Fourth.—They will be allowed to attend such lectures and public meetings only as may be considered by the Principal conducive to their moral and mental improvement.

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* Except in the case of Teachers-in-training for the Academy Diploma, who may receive a sum not exceeding $80.

Article Fifth.—Proprietors of boarding-houses authorized by the Principal shall report to him any infraction of the rules with which they may have become acquainted.

Article Sixth.—The Professors shall have the power of excluding from the lectures for a time any student who may be inattentive to his studies, or guilty of any minor infraction of the regulations.

Article Seventh.—Teachers-in-training will be required to state with what religious denomination they are connected; and a list of the Students connected with each denomination shall be furnished to one of the Ministers of such denomination resident in Montreal, with request that he will meet weekly with that portion of the Teachers-in-training, or otherwise provide for their religious instruction. Every Thursday after four o'clock will be assigned for this purpose.

Article Eighth.—In addition to punctual attendance at weekly religious instruction, each Student will be required to attend public worship at his own church, at least every Sunday.

MODEL SCHOOLS OF THE McGILL NORMAL SCHOOL.

Boys' School.—George Parmelee, *Head Master.*

Selina Sloane, } *Assistants.*
Elizabeth Reid, }

Girls' School.—Jane A. Swallow, *Head Mistress.*

Mary J. Peebles. } *Assistants.*
Louisa McNaughton, }

Primary School.—Lucy H. Derick, *Head Mistress.*

Marion Taylor, *Assistant.*

These Schools can accommodate about 300 pupils, are supplied with the best furniture and apparatus, and conducted on the most modern methods of teaching. They receive pupils from the age of six and upwards, and give a thorough English Education. Fees, Boys' and Girls' Model Schools, 25c. to 40c. per week; Primary school 20c.; payable weekly in advance.

University Gymnasium.

MR. FREDERICK S. BARNJUM, Instructor.

The classes, which are open to the Students of all the Faculties, will meet at the University gymnasium, at hours to be announced at the commencement of the Session.

The Wicksteed gold, silver and bronze medals for Physical Culture (the gift of Dr. R. J. Wicksteed), are offered for competition to students of the graduating class, and to students who have had instruction in the gymnasium for two sessions, the gold medals to the former, the silver and bronze medals to the latter.

The award of these medals is made by Judges appointed by the Corporation of the University.

Every competitor for the gold medal is required to lodge with the Judges, before the examination, a certificate of good standing in the graduating class, signed by the Dean or Secretary of the Faculty to which he belongs, and the medal will not be awarded to any student who may fail in his examination for the degree.

SUPPLEMENTARY TO

Faculty of Arts.

CORRECTIONS IN SUBJECTS FOR FIRST YEAR'S EXHIBITIONS.

September 1886:—

In Latin and Greek the Subjects for the Associate in Arts for June 1886 will be received, with the addition of Demosthenes, Aphobus, I. and II.

September 1887:—

Homer Iliad, VI., instead of XXII.

Horace Odes, Bk. I., instead of Cicero in Catilinam Orat. I.

ERRATUM.

Under Second Year's Exhibitions in Faculty of Arts—"Chemistry as in Nichol's Abridgment of Elliott & Storer's Manual as far as p. 108," should be "*as far as p.* 208."

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University Societies.

THE GRADUATES' SOCIETY OF McGILL UNIVERSITY.

INCORPORATED 1880.

OFFICERS FOR 1886-87.

President:
ARCHIBALD McGOUN, B.A., B.C.L.

Vice-Presidents:
JOHN S. HALL, B.A., B.C.L. | THOS. A. RODGER, M.D.
B. J. HARRINGTON, B.A., PH.D.

Secretary:
J. RALPH MURRAY, B.A., B.C.L., 1277 St. Catherine Street.

Treasurer:
W. T. SCAIFE, B.A. Sc., 630 Sherbrooke Street.

Resident Councillors:

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C. J. DOHERTY, B.C.L.
JAMES STEWART, M.D.
A. H. U. COLQUHOUN, B.A.
ALEX FALCONER, B.A., B.C.L.
W. DIXON, B.A.

Non-Resident Councillors:

WM. OSLER, M.D., Philadelphia.
J. J. McLAREN, B.C.L., Toronto.
BROWN CHAMBERLIN, M.A., B.C.L., Ottawa.
REV. E. J. REXFORD, M.A., Quebec.
HON. W. W. LYNCH, B.C.L., Quebec.
REV. W. J. DEY, M.A.

UNDERGRADUATES' LITERARY SOCIETY.

CONSTITUTED 1880.

The object of this Society is the mutual improvement of its members, by means of debates, essays, readings, &c. The Society is open for membership to all students attending the classes in any of the Faculties of McGill College.

OFFICERS FOR 1885-86.

President:
N. P. YATES, ARTS.

Vice-Presidents:
R. B. HENDERSON, ARTS. | HILTON PEDLEY, ARTS.

Secretary:
ARCH. MACARTHUR, ARTS.

Assistant Secretary:
FRANK CHARTERS,

Treasurer:
J. A. HISLOP, SCIENCE.

McGILL COLLEGE
YOUNG MEN'S CHRISTIAN ASSOCIATION.

OBJECT.—To unite in an Association all who are interested in the cause of religion, for the purpose of mutual help in the Christian life, and for the promotion of good morals and Christian living in the College.

MEMBERSHIP.—Open to students of all the Faculties. Membership is of two kinds: Active—Open to a member of an Evangelical church; Associate—Open to any young man of good moral character. A social reception is given to new students at the beginning of the session.

OFFICERS.

Honorary President: PRINCIPAL DAWSON.

President:
J. K. UNSWORTH, B.A., Cong. Coll.

Vice-President:
J. R. CLOUSTON, '88—Medicine.

Treasurer:
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Rec. Secretary:
W. G. STEWART, B.A., '89—Medicine.

Corresponding Secy.:
J. McDOUGALL, '86—Arts.

McGILL UNIVERSITY
ATHLETIC ASSOCIATION.

ESTABLISHED 1884.

Open for membership to undergraduates in this University.

OFFICERS 1886-87.

President: SIR WILLIAM DAWSON.

Vice-President:
ROBT. E. PALMER.

Secretary:
JOHN A. SPRINGLE.

Treasurer:
PROF. C. H. McLEOD.

Assistant Treasurer: C. COLBY.

IN AFFILIATION.

McGill Football Club,
Secy.: WM. J. HAMILTON.

McGill Hockey Club,
Secy.: CHAS. SWABEY, B.A.

Annual Field Meeting 17th October, 1886, comprising a programme of 21 events.

Football season opens September 15th. All players should be in condition by that date.

The Secretaries will furnish all information on application to intending students and others.

Fine cinder track and apparatus ready for use.

EXAMINATION PAPERS

OF THE

McGILL UNIVERSITY,

MONTREAL.

SESSION OF 1885-6.

Montreal:

PRINTED BY JOHN LOVELL & SON,
ST. NICHOLAS STREET.
1886.

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FACULTY OF LAW.

SESSIONAL EXAMINATIONS, 1886.

SECOND AND THIRD YEARS.

INTERNATIONAL LAW AND SALES.

Examiner,.....PROFESSOR W. H. KERR, Q.C., D.C.L.

1. A sold verbally to B, 1,000 bushels of wheat at $1 per bushel, deliverable in three days, as per sample, which sample, consisting of a half bushel of the wheat taken from the 1,000 bushels sold, was delivered over to B at the time of the sale. B afterwards, on the 999½ bushels being tendered to him at the time agreed upon, refused to take them, wheat in the meantime having fallen to 90 cts. per bushel.

Can A maintain an action *v.* B ? Give the reasons for your decision.

2. A sold to B 100 tons pig iron, to arrive per SS. *Circassian* on or about the 15th May, 1881. The *Circassian* arrived on the 14th May, 1881, without having on board any iron for A, but having on board 100 tons pig iron, the property of and consigned to C. B demanded delivery of the iron from A, which was refused.

Has B any action *v.* A for non-delivery ? Give the reasons for your decision.

3. A, a merchant at Quebec, purchased from B, at Montreal, five hundred quarters of wheat. A sent a barge, his property, to Montreal to receive the wheat. B shipped it on the barge, taking a bill of lading from the barge master, deliverable to his, B's, order,—B drawing bills on A at the same time for the price, which he attached to the bill of lading. On the way from Montreal to Quebec the barge foundered, and the wheat was a total loss.

B sued A for the price of the wheat. Had A any defence ? What judgment should have been given in the case ? Give your reasons.

4. A, of Montreal, by letter requested B, a merchant in London, to sell him fifty pipes of wine and to dispatch them to him at Montreal. B selected fifty pipes of wine from his stock, and delivered them to a common carrier, to be by him taken and shipped from the docks by steamer to Montreal. Immediately after delivery to such common carrier all the pipes of wine were destroyed by accident (*cas fortuit*).

B sued A for the price of the fifty pipes of wine by action before the Superior Court at Montreal. A pleaded that the wine was never delivered to him. What should be the judgment in the case ? Give your reasons.

5. In March, 1866, a schooner belonging to citizens of the United States and there registered, entered a bayon the Canadian coast, five miles wide between its headlands, but with a breadth of fifteen miles, seven miles from its entrance, and twenty miles deep. At a distance of four miles from the shore at the widest part of the bay the persons on board the said schoone commenced to fish. A British cruiser seized the schooner immediately.

Was such seizure justified? Give your reasons.

6. A, a Frenchman of twenty-two years of age, married, according t Quebec law, at Montreal, B, a British subject, without having obtained th consent of his *ascendants*, required by the law of France. A afterward returned to France and within the time allowed by the French law inst tuted there proceedings to have his marriage declared null, on the groun of want of consent by his *ascendants*. Had the marriage been celebrate in France the ground alleged would have been sufficient. Does the fa of the marriage having taken place in Quebec work any difference?

7. A sold to B 500 bushels of wheat, to be taken out of 1,000 bushe belonging to him stored in a warehouse in Montreal, and gave a delive order addressed to the warehouseman, requiring him to make delivery the said 500 pushels to B, or to his order. This order was duly presente to the warehouseman, who accepted it in writing. B afterwards sold to the said 500 bushels, and upon the delivery order so given and accept endorsed the words "deliver the within 500 bushels of wheat to C"—a delivered the same to C. B having become insolvent, and the price of t wheat so sold him never having been paid to A, the latter countermand the delivery order, but the warehouseman delivered 500 bushels of t wheat to C, and A thereupon brought his action against the warehou man to recover the value of the wheat so delivered.

What should the judgment be in such a case? Give your reasons.

8. Germany and France being at war a French frigate chased a Germ corvette, which succeeded in getting within two miles of the English co and was then captured by the French man-of-war. Both vessels, be much damaged, sought refuge in the port of Plymouth.

The German Ambassador at the Court of St. James demanded redr from the British Government. What was the duty of that Government

9. A sold and B bought, through a broker, 1,000 bushels of bar whereof a sample was exhibited to B before he bought, at eighty cents bushel; but the broker's notes were silent as to the sale being by sam or that a sample had been exhibited. B refused to accept the bulk, on ground that it was not equal to the sample exhibited. Barley having fa between the date of the contract and that fixed for the delivery to 70 c per bushel, A sued in damages for non-acceptance. What judgment sho be rendered in the case? Give your reasons.

The first six questions for Ordinary Students. The whole paper Medal and Professor's Prize.

FIRST YEAR.

ROMAN LAW.

Examiner,.....PROF. N. W. TRENHOLME, M.A.

1. Give the principal sources of our knowledge of the history of Roman Law and the divisions of that history.

2. Describe the different Epochs in the growth of law mentioned by Maine.

3. What are the principal sources of the Roman Law ?

4. What were *Leges Agrariæ* of the Roman Law ?

5. What events in the latter half of the Republic affected the extension and culture of the Roman Law ?

6. Give an account of the compilations of Justinian and of the destiny of the Roman Law after his time.

SECOND AND THIRD YEARS.

ROMAN LAW.

Examiner,.....PROF. N. W. TRENHOLME, M.A.

1. What was the *Hæreditas*, and how was it deferred in Roman Law, and how in our Law ?

2. What were the principal forms of wills in Roman Law ; what in our Law?

3. What is the *jus separationis*, and when and by whom may it be exercised in our law ?

4. What is *partage*, and how is it effected with us ?

5. What was the *substitutio* and *fidei commissa* of the Roman Law, and what have we corresponding thereto ?

6. Give some of the principal divisions of property in Roman Law and in our Law—and their importance.

The following are only for medal men :

7. Indicate how the debts of a succession are to be paid where there are different heirs and legatees,

8. Give a sketch of the growth of the Law of Contract.

9. Define *Usucapio, Res Mancipi, Jus Latinum, Jus Italicum, Jus Honorarium, Principum, Placita.*

FIRST YEAR.

CRIMINAL LAW.

Examiner,.....PROFESSOR ARCHIBALD, M.A., B.C.L.

1. By what law are we governed in Criminal matters in Lower Canada? When and by what statute was English Criminal Law introduced?

2. What is a principal in the first degree; a principal in the second degree; an accessory before the fact; an accessory after the fact? Illustrate by examples.

3. In what cases can a married woman escape responsibility for her acts?

4. Define murder, manslaughter, riot, conspiracy, larceny, embezzlement, burglary, arson. May a man be guilty of larceny in carrying away his own property, and if so when?

5. Give a sketch of the history of the law of Criminal libel; what pleas may be set up against an indictment for this offence?

6. On an indictment for larceny, it appeared that the prosecutor had been inveigled by sharpers to bet with them, and had been suffered by them to win in the first instance, but was afterwards stripped of a large sum of money by losing a bet, which money was paid over to them by the prosecutor without demur, he thinking it had been fairly won, and the whole transaction was found by the jury to have been a preconcerted scheme to get the prosecutor's money; should the prisoners have been convicted?

What principle is involved, and state the test for deciding the question.

SECOND AND THIRD YEARS.

CRIMINAL AND CONSTITUTIONAL LAW.

Examiner,.....PROFESSOR ARCHIBALD, M.A., B.C.L.

1. What are the principal provisions of the Statute of Treasons, 25 Ed. III.

2. In an indictment for seditious riot could the inscriptions on banners, carried by the rioters, be proved without production of the banners? What principle is involved, and give the reasons for your opinion.

3. Under what circumstances are dying declarations admissible as evidence?

4. What is the constitution of the court for the trial of criminal causes in the North-West Territories?

5. How is the Senate of Canada constituted ? How may its members be increased or diminished.

6. The Legislature of Quebec passed an act, authorizing the City of Montreal to make an ordinance for the prevention of smoke nuisances and the imposition of penalties. A, being prosecuted before the Recorder for a violation of such ordinance, takes a writ of prohibition, alleging the unconstitutionality of the ordinance. What should be the judgment on such writ? Give the principal arguments *pro.* and *con.*

7. (See No. 1.)

Give a historical sketch of the law of criminal libel : Draft a plea of justification.

8. In what cases, if any, does concurrent jurisdiction exist, in both the legislatures and parliament under the B. N. A. Act. Is there any case which seems to indicate a concurrent jurisdiction under certain conditions in matters of Insolvency ?

9. What are the principal points for argument *pro.* and *con.* as to the constitutionality of the Dominion License Act.

The first six questions constitute the ordinary pass examination, the whole paper for medal examination.

FIRST YEAR.

LEGAL HISTORY.

Examinateur,.....PROFESSEUR LAREAU, B.C.L.

1. Indiquez les principales sources du droit coutumier.

Enumerate the principal sources of the customery law.

2. Quelles sont les principales ordonnances du XVIe siècle, et quels objets avaient-elles principalement en vue ?

What are the principal ordinances of the XVIe century, and what are their principal objects.

3. L'enregistrement des ordonnances au Conseil Supérieur de Québec était-il nécessaire ? Quelles sont les raisons pour ou contre la nécessité de l'enregistrement ?

Was it necessary to register the ordinances before the Superior Consel of Quebec ? What are the reasons *pro* and *con.* ?

4. Quel est l'objet de l'ordonnance de 1667 ?

What is the object of the ordinance of 1667 ?

5. Quelles sont les principales clauses de l'acte constitutionel de 1791 ?

What are the principal clauses of the constitutional act of 1791 ?

6. Quelles sont les principales clauses de l'acte constitutionel de 1840 ?

What are the principal clauses of the constitutional act of 1840 ?

SECOND AND THIRD YEARS.

CIVIL LAW.

Examinateur,..... .....PROFESSEUR LAREAU, B.C.L.

1. Quel est l'effet du cautionnement entre le créancier et la caution ?

What is the effect of suretyship between the creditor and the surety ?

2. Quel est l'effet du cautionnement entre le débiteur et la caution ?

What is the effect of suretyship between the debtor and the surety ?

3. Quel est l'effet du cautionnement entre les cautions ?

What is the effect of sureyship between co-sureties ?

4. Définisez le contrat de transaction ?

Define trausaction ?

5. Le tuteur peut-il faire une transaction, si oui, sous quelle circonstance ? Quid quant aux femmes mariées.

Can tutors enter into the contract of transaction ; and if so, on what formalities. Quid as to maried women.

6. Peut-on louer un droit d'usage et d'habitation.

Can a right of use and habitation be the object of a contract of lease.

7. Qu'entendez-vous par *troubles de droit* et *troubles de fait*, et quelle différence il y a-t-il entre le trouble et l'éviction. Quelle est la conséquence de ces troubles relativement au locataire.

Define *troubles de droit* and *troubles de faits* and give the difference between the trouble and the eviction. What is the consequences of these troubles *quo ad* the tenant?

8. Le locataire conserve-t-il son privilège sur les meubles du locataire lorsque le bail est verbal ?

Has the lessor a privilege on the tenant furniture in case of a verbal lease.

9. Quels recours peut exercer le locataire lorsque le locateur ne lui délivre pas la propriété louée.

What recourse the lessee may exercise against the lessor if there is no delivery of the premisses ?

N. B. The first six questions for ordinary ; the whole nine for candidates for the medal.

Les élèves qui concourent pour la médaille répondront à toutes les questions. Ceux qui ne concourent pas répondront aux six premières questions seulement.

FIRST YEAR.

CIVIL PROCEDURE.

Examiner,.....PROF. M. HUTCHINSON, B.C.L.

1. Under what circumstances can the Lieutenant-Governor render a particular day non-juridical ?

2. How can a minor sue or be sued ? How can a married woman ?

3. What difference is there, if any, between a brother and sister, both of full age, as to the mode of exercising their civil rights before the Courts ? What difference would there be after both are married ? and what difference after the dissolution of the marriage by the death of the consort of each ?

4. In taking a suit against a public officer for some act done by him in the exercise of his functions, what formalities must be observed, and where must the action be brought ? and how would it be if the action against the public officer was to recover a debt due by him personally, independent of his office ?

5. An affidavit of a party in New York is required to be used in a suit pending before the Superior Court at Montreal. Before whom must this affidavit be sworn in New York in order to be recognized by the Court here ?

6. Under what circumstances can a suit be brought *in forma pauperis* ? How about the defence ? and what is the effect of pleading *in forma pauperis* ?

7. A makes a promissory note in Montreal, and delivered it to B in Toronto, who endorses and delivers it in Toronto to C. Can C take an action against B alone in Montreal on this note ? Give reasons.

8. A, B and C all reside at Sherbrooke and sign an obligation there in favor of D. Under what circumstances can D bring an action, on this obligation against A, B and C, in Montreal ?

9. How would you describe in a writ of summons five persons doing business together in partnership in Montreal under the name and firm of "The Montreal Cotton Co.", and how would the description be if these same persons became incorporated and did business under the same name as a corporate body?

SECOND AND THIRD YEARS.

CIVIL PROCEDURE.

Examiner,.....PROF. M. HUTCHINSON, B.C.L.

1. Under what circumstances can a debtor make a voluntary assignment of his property for the benefit of his creditors? And when must a demand be made, and by whom? And where must the assignment of judicial abandonment be made, and how is it effected?

2. Who appoints the Provisional Guardian; what are his duties, and what are his powers as to the disposal of perishable goods; and how long does he continue to act?

3. Who appoints the Curator, and how is he appointed? How can he prevent moveables comprised in the judicial abandonment which are seized under a writ of execution from being sold? What could he do if the immoveables belonging to the estate were about to be sold under an execution issued at the instance of a creditor? How would the creditor rank on the estate as to his costs of judgment and seizure?

4. If a debt was due the Insolvent's Estate by a third party, how and in whose name must the suit be taken for the recovery of the debt? How would you proceed to recover a debt due by the Curator in his administration of the Estate? How is the sale of immoveables belonging to the Estate effected? Who issues the warrant, and to whom is it addressed?

5. Under what circumstances may a writ of *capias* issue against a debtor who refuses to make an assignment of his property for the benefit of his creditors? And under what circumstances can a Commissioner's Warrant be obtained in Montreal, where there is a ground for the issue of a *capias*?

6. Under what circumstances is a creditor entitled to a writ of seizure before judgment against the moveable effects of his debtor? When may a writ of seizure issue without an affidavit, and why?

7. Can a landlord seize before judgment by garnishment goods belonging to his tenant in the possession of a third party? What recourse has a landlord against the goods of his tenant, which garnished the landlord's premises, and which are in the possession of a third party?

8. A traveller gives a trunk into the care of a hotelkeeper for safe keeping: while in the latter's charge it is taken by a third party—who has the right to revendicate the trunk, and what is the nature of the affidavit required?

9. In a suit for separation as to property what notices are required? as to separation from bed and board, what notices? Where must the action be brought? What authority must the wife have? If the husband takes the suit, does the wife require to be specially authorized to appear and plead?

FIRST YEAR.

CIVIL LAW.

Examiner,.....PROFESSOR ROBIDOUX, B.C.L.

1. What is understood by the term "civil rights?" What persons do not enjoy them?

2. How many degrees *périodes* of absence does the law recognize? State what is peculiar to each.

3. How is domicile established as regards marriage? What is understood by publication of bans? When and where must it be made?

4. What is separation from bed and board? What effects of marriage subsist after separation from bed and board? For what causes can it be demanded? What are the effects of separation as regards property?

5. How are tutors appointed? What is the procedure to be followed under the different methods to which recourse may be had for the nomination of a tutor?

6. How are corporations formed? How are they dissolved?

PREMIÈRE ANNÉE.

DROIT CIVIL.

Examinateur.....PROFESSEUR ROBIDOUX, B.C.L.

1. Qu'entend-on par droits civils? Quelles sont les personnes qui n'en jouissent pas?

2. Combien de périodes la loi distingue-t-elle dans l'absence? Dites ce qui est particulier à chacune d'elles.

3. Comment s'établit le domicile quant au mariage? Qu'entend-on par publication de bans? Quand et où doit-elle se faire?

4. Qu'est-ce que la séparation de corps et de biens? Quels effets du ma-

riage laisse-t-elle subsister ? Pour quelle cause peut-elle être demandée ? Quels sont les effets de la séparation quant aux bieus ?

5. Devant qui peut être convoqué un conseil de famille dans le but de faire nommer un tuteur ? Dites la procédure à suivre, selon la personne devant qui le conseil est convoqué ?

6. Comment sont créées les corporations ? Comment sont-elles dissoutes ?

SECOND AND THIRD YEARS.

CIVIL LAW.

Examiner,..... .....PROFESSOR ROBIDOUX, B.C.L.

1. Of what do the assets of the community consists ? What things compose the assets (*propres*) of the consorts ? Of what do the liabilities of the community consist ? Of what do the liabilities (*propres*) of the consorts consist ?

2. What are the powers of the husband over the *propres* of his wife ?

3. What are the rights of the wife who has renounced the community ? What are her obligations ?

4. By what agreements may the consorts modify the community ? Define these agreements.

5. What must the consorts return into the community after its dissolution ? What can each consort pretake ? On what property are the pretakings of each consort effected ?

6. If the heirs of the wife are divided, some having accepted, and some renounced the community, what are the rights of each class of such heirs ?

7. To what extent is the wife who has renounced the community liable for its debts ? How far is the husband liable for debts of the community, contracted by him ?

8. In what does the customary dower of the wife consist ? When may the wife be deprived of her dower ?

DEUXIÈME ET TROISIÈME ANNÉES.

DROIT CIVIL.

Examinateur,.....PROFESSEUR ROBIDOUX, B.C.L.

1. De quoi se compose l'actif de la communauté? De quoi se compose l'actif propre des époux? De quoi se compose le passif de la communauté? De quoi se compose le passif propre des époux?

2. Quels sont les pouvoirs du mari sur les propres de la femme?

3. Quels sont les droits et les obligations de la femme commune en biens qui renonce à la communauté?

4. Quelles sont les différentes modifications que les époux peuvent apporter à la communauté légale? Définissez-les.

5. Lors de la dissolution de la communauté quelles valeurs les époux doivent-ils rapporter? Quelles valeurs sont prélevées par chaque époux? Sur quels biens s'exercent les prélèvements des époux?

6. Quand parmi les héritiers les uns acceptent et les autres renoncent, quels sont les droits des uns et des autres?

7. Jusqu'à quel point la femme est-elle tenue des dettes de la communauté? Comment le mari est-il tenu des dettes de la communauté contractées par lui?

8. En quoi consiste pour la femme le douaire coutumier? Quand la femme peut-elle être déclarée déchue de son douaire?

FIRST YEAR.

MERCANTILE AGENCY AND PARTNERSHIP.

Examiner,.....PROFESSOR L. H. DAVIDSON, M.A., D.C.L.

1. What are the principal classes of Mercantile Agents? Explain briefly the characteristics distinguishing one class from another? Who may legally appoint, and who may be appointed and act as, an Agent?

2. Explain the reasons for the rule that, apart from special authorization granted by the Principal, an agent cannot delegate his functions to another, and state any exceptions to this rule. Show how this rule applies in the case of Partnership.

3. What are the chief duties of the Agent in regard to his Principal, and what the rights of third persons against the latter for acts of the former? Explain fully.

4. What is meant by the "lien" of the Agent, and explain briefly how the right may be acquired, how enforced, and how lost?

5. State the rules for determining whether a Partnership exists or not between two or more persons acting together, in the absence of specific agreement or in case of one, indefinite in terms?

6. What are the chief classes of Commercial Partnerships? Define each. What are the rights and liabilities of partners amongst themselves? Explain fully.

SECOND AND THIRD YEARS.

BILLS, NOTES AND CHEQUES.

Examiner,..... .....PROFESSOR L. H. DAVIDSON, M.A., D.C.L.

1. Explain the difference between a Bill, Note and Cheque, pointing out the points in which they agree, or resemble each other?

2. What is meant by "Consideration" as applied to Bills and Notes? Explain what is a good or sufficient Consideration, and what defences may arise in this connection in case of suit; and by whom such defence may be made.

3. What is meant by "transferring a bill or note," and explain when and how this may be done, effectively under the law merchant? Explain fully.

4. What steps are necessary in order to fix the liability of the drawer, drawee and indorsers respectively upon a Bill? What is the effect of payment of a Bill by the acceptor, and of a note by the maker, or by the indorsers of either?

5. What is a "material alteration" in a Bill or Note? and what is the effect of such alteration when made by (1) the drawer and payee of the bill, or (2) by an indorsee?

6. What is necessary in order to fix the liability of the Bank upon which a Cheque is drawn? What is the effect of marking or certifying a Cheque?

7. What constitutes "forgery" in connection with a Bill, Note or Cheque? And how is a *bonâ fide* holder for value affected by it? Explain as to the case of forged signature of maker and of indorser respectively?

8. Explain the differences, if any, as to presentation, for acceptance and for payment in the case of a Bill and a Cheque?

9. Explain what is meant by an acceptance "Supra protest"? What is the liability of the acceptor "Supra protest," and what does his acceptance admit?

FACULTY OF MEDICINE.

MATRICULATION EXAMINATION, 1886.

LATIN

Examiner,.....H. ASPINWALL HOWE, M.A., LL.D.

NOTE.—Candidates may choose between Cicero and Virgil.

CICERO.

1. Translate, *without unnecessary change of construction* :—

(*a*) Ibis tandem aliquando, quo te jampridem tua ista cupiditas effrenata ac furiosa rapiebat. Neque enim tibi hæc res affert dolorem, sed quamdam incredibilem voluptatem. Ad hanc te amentiam natura peperit, voluntas exercuit, fortuna servavit. Numquam tu non modo otium, sed ne bellum quidem, nisi nefarium concupisti. Nactus es ex perditis atque ab omni non modo fortuna, verum etiam spe derelictis conflatam improborum manum. Hic tu qua lætitia perfruere? quibus gaudiis exsultabis? quanta in voluptate bacchabere, quum in tanto numero tuorum neque audies virum bonum quemquam, neque videbis? Ad hujus vitæ studium meditati illi sunt, qui feruntur, labores tui: jacere humi non modo ad obsidendum stuprum, verum etiam ad facinus obeundum: vigilare non solum insidiantem somno maritorum, verum etiam bonis occisorum.

(*b*) Atque ut ejus diversa studia in dissimili ratione perspicere possitis; nemo est in ludo gladiatorio paullo ad facinus audacior, qui se non intimum Catilinæ esse fateatur; nemo in scena levior et nequior, qui se non ejusdem prope sodalem fuisse commemoret. Atque idem tam in, stuprorum et scelerum exercitatione assuefactus, frigore et fame et siti ac vigiliis perferendis fortis ab istis prædicabatur, quum industriæ subsidia atque instrumenta virtutis in libidine audaciaque consumeret. Hunc vero si secuti erunt sui comites, si ex Urbe exierint desperatorum hominum flagitiosi greges, o nos beatos, o rempublicam fortunatam, o præclaram laudem consulatus mei!

2. Parse all the words of:—Neque enim *tibi hæc res affert* dolorem, sed *quamdam incredibilem voluptatem*. Decline those that are italicised, taking *hæc res* together, and also *quamdam incredibilem voluptatem* together.

3. Give the principal parts of the verbs, *affert, peperit, concupisti, nactus es, jacere*.

4. Explain the terms Deponent, Inceptive, Frequentative, Desiderative as applied to Verbs, and give an example of each.

5. Give the derivation of *cupiditas, incredibilis, exsulto, insidians, assuefacio*. State the force of each component part.

6. Write short explanations of:—

(*a*) *Qua lætitia perfruere*. What case is this? Give Rule.

(*b*) *Jacere humi*. Account for this genitive.

(*c*) *Ad facinus obeundum*. Explain fully what is called the gerundive construction.

(*d*) *In ludo gladiatorio.* What were these *ludi?*

(*e*) *Si ex Urbe exierint.* What tense? Is the *Mood* Indicative or Subjunctive? Your reason?

VIRGIL.

1. Translate, *without unnecessary change of construction* :—

(*a*) Sic ait, et dicto citius tumida æquora placat,
Collectasque fugat nubes, solemque reducit.
Cymothoë simul et Triton adnixus acuto
Detrudunt naves scopulo; levat ipse tridenti,
Et vastas aperit syrtes, et temperat æquor:
Atque rotis summas levibus perlabitur undas.
Ac veluti magno in populo quum sæpe coorta est
Seditio, sævitque animis ignobile vulgus;
Jamque faces et saxa volant: furor arma ministrat:
Tum, pietate gravem ac meritis si forte virum quem
Conspexere, silent, arrectisque auribus adstant;
Iste regit dictis animos, et pectora mulcet:
Sic cunctus pelagi cecidit fragor, æquora postquam
Prospiciens genitor, cœloque invectus aperto,
Flectit equos, curruque volans dat lora secundo.

(*b*) Obstupuit primo aspectu Sidonia Dido,
Casu deinde viri tanto; et sic ore locuta est:
"Quis te, nate dea, per tanta pericula casus
Insequitur? quæ vis immanibus applicat oris
Tune ille Æneas, quem Dardanio Anchisæ
Alma Venus Phrygii genuit Simoëntis ad undam?
Atque equidem Teucrum memini Sidona venire,
Finibus expulsum patriis, nova regna petentem
Auxilio Beli: genitor tum Belus opimam
Vastabat Cyprum, et victor ditione tenebat:
Tempore jam ex illo casus mihi cognitus urbis
Trojanæ, nomenque tuum, regesque Pelasgi.
Ipse hostis Teucros insigni laude ferebat,
Seque ortum antiqua Teucrorum ab stirpe volebat.
Quare agite, o tectis, juvenes succedite nostris.
Me quoque per multos similis fortuna labores
Jactatam hac demum voluit consistere terra.
Non ignara mali miseris succurrere disco."

2. Parse all the words of:—*Obstupuit primo aspectu* Sidonia Dido, casu deinde *viri* tanto. Decline those that are italicised, taking *primo aspectu* together. Decline also *quæ vis* together.

3. Give the principal parts of the verbs, *aperit, perlabitur, conspexere, genuit, expulsus.*

4. Explain the terms Deponent, Inceptive, Frequentative, Desiderative, as applied to verbs, and give an example of each.

5. Give the derivation of *periculum, auxilium, fragor, secundus, juvenis.*

6. Write short explanations of :—

(*a*) *Iste regit dictis animos.* Why would *ille* be better?

(*b*) *Curruque volans dat lora secundo.* In what case is *curru*, and why?

(*c*) *Sidona venire.* In what case is *Sidona*, and why?

(*d*) *Tectis succedite nostris.* Is *tectis* in the dative or ablative? Your reason?

(*e*) *Non ignara mali.* What adjectives are followed by a genitive?

ENGLISH.

Examiner,.....H. ASPINWALL HOWE, M.A., LL. D.

1. What is meant by *inflexion?* Give examples of forms of inflexion that still survive in the English language.

2. Define *adjective*, and give its derivation. Assign each of the following adjectives to its proper class :—*each, some, honest, eight, many, those.* Give three examples of adjectives used as nouns.

3. State the different ways of forming the past tense and past participle of a verb. Give these parts of the verbs *fall, lay, lie, wring, beat, see, saw, sew, sow, swim.* What parts of verbs may be used (*a*) as nouns, and (*b*) what as adjectives?

4. Discuss the following statement :—All pronouns are *relative.* It would be better therefore to distinguish the pronoun *who* by the name *conjunctive pronoun*, and this view is confirmed by examining into the composition of the Latin relative *qui.*

5. What is meant by *prefix* and *suffix.* Give the meaning and derivation of the following words, indicating the force of each component part :—*dearth, darling, casual, causal, inadvertent, reptile, balloon, autobigraphy, telegraph, telegram.*

6. Analyse :

> An inadvertent step may crush the snail
> That crawls at evening in the public path;
> But he that has humanity, forewarned,
> Will tread aside and let the reptile live.

7. Parse the words found in italics below :—

(*a*) The translation will be read *when* the original is forgotten *but* not *till then.*

(*b*) *Fearing that* the load was injuring the horse, I felt no pleasure in *travelling* through *that entrancing* scenery.

8. Correct or improve :—

(*a*) I chose the smallest of the two, because it seemed most preferable.

(*b*) He said he won't give me none.

(*c*) These sort of men are sure not to speak true, like we do.

9. Write a short composition on "Athletic Sports."

BRITISH HISTORY AND GEOGRAPHY.

Examiner,.....H. ASPINWALL HOWE, M.A., LL.D.

(A) 1. On what did William the Conqueror base his claim to the throne of England? What were the prominent traits of his character?

2. Name the foreign possessions of Henry II. State how and when each was acquired and how and when lost?

3. Write a short sketch of the reign of Richard II.

4. What circumstances and causes led to the accession of William of Orange to the throne of England?

5. How did England acquire Canada? Of what European war was this acquisition an episode? How did she lose her American Colonies?

6. What great events are associated with Thomas à Becket, The Black Prince, John Hampden, General Monk, Clive?

(B) 1. State some of the causes which determine climate. Name countries and places which may illustrate your answer.

2. Give the names and position of the great lakes in Central Africa discovered within the last 30 years. Trace the course of the Nile, the Congo and the Zambesi.

3. A ship sails from the Sea of Azov to Cronstadt in the Baltic. Mention the seas and straits she will traverse, and the principal towns, capes, etc., she will pass by.

4. What facilities for communication have been effected by the Suez Canal and will be effected by the Panama Canal?

5. Where and what are:—Alaska, Delhi, Khartoum, Mandalay, Riga, Socotra, the Garonne, Port Said, the Caucasus, Baikal?

ARITHMETIC AND ALGEBRA.

Examiner,.....H. ASPINWALL HOWE, M.A., LL.D.

NOTE.—The full working of each question must be given.

(A) 1. If 1 qr. 23 lbs. be the quotient, 672 the divisor, and 1 qr. 19 lbs. the remainder, what is the dividend? Obtain the answer without reducing the quantities to lbs., and by using the factors of 672.

2. Divide $85.50 among A, B and C, so that B's share may be $\frac{6}{11}$ of A's, and that C may have $9 more than A and B together.

3. Simplify without converting into vulgar fractions:

$$\frac{.0038425 - .00183}{.035}$$

4. A substance, in undergoing a process, lost 42 per cent. of its weight, which after the process was 1102 lbs. What was the weight before the process?

5. When the 3 per cent. stock is at 96, I can obtain £1 more of annual income than when it is at 97. How much money have I to invest?

(B) 1. What must be the value of c in order that $x^2 + 7x + c$ may be exactly divisible by $x + 4$?

2. Reduce the fraction $\frac{(x^4 - b^4)(x - b)}{(x^2 + b^2 - 2bx)(bx + x^2)}$ to its lowest terms.

3. Simplify $\left(a - b + \frac{b^2}{a+b}\right) \div \left(a + b + \frac{b^2}{a-b}\right)$

4. Solve the simultaneous equation:—

$$\left\{ \begin{array}{l} \frac{a}{x} + \frac{b}{y} = m \\ \frac{b}{x} - \frac{a}{y} = n \end{array} \right\}$$

5. A clock loses at the rate of $8\frac{1}{2}$ seconds an hour when the fire is burning, and gains at the rate of $5\frac{1}{10}$ seconds when the fire is out. On the whole it neither gains nor loses; how long in the 24 hours is the fire burning?

GEOMETRY AND NATURAL PHILOSOPHY.

Examiner,..... H. ASPINWALL HOWE, M.A., LL.D.

(A) 1. PROP. 26, BK. I. If two triangles have their bases equal, and also the angles at the bases equal, each to each, the triangles are equal in every respect.

2. Enunciate PROP. 34, BK. I. Define *parallelogram* and *rhombus*. Prove that the diagonals of a parallelogram bisect each other, and, further, that in a rhombus they bisect at right angles.

3. PROP. 9, BK. II. If a straight line be divided into two equal and also into two unequal parts, the squares on the unequal parts are together double of the square on half the line and of the square on the line between the points of section.

4. Prove, by aid of the preceding, that if a straight line be drawn from the vertical angle of a triangle to the middle of the base, the squares on the sides of the triangle are together double of the squares on half the base and on the line drawn from the vertex to the middle of the base.

(B) 1. Determine by a geometrical construction the resultant of three forces acting on a particle in given directions in the same plane.

2. Explain the meaning of: (*a*) uniform motion; (*b*) uniformly accelerated motion; (*c*) retarded motion; and state how such effects are produced. Why does not motion cease when the cause which produces motion ceases to act?

3. Give some illustrations of phenomena in which the forces of *chemical affinity*, *cohesion* and *adhesion* come respectively into play.

4. In what respect does a *liquid* differ from a *gas?* How may it be proved that a gas is affected by gravity.

5. If the S. G. of sea-water is 1.0623 and that of ice ·9214, how much of the volume of a floating iceberg is below the surface of the water?

CHEMISTRY AND BOTANY.

Examiner, ...H. ASPINWALL HOWE, M.A., LL.D.

(A) 1. What is understood by *standard temperature*, and *pressure* in the measurement of gases?

2. Give the formula for *water*, and explain how you would shew that this formula correctly represents the composition of water.

3. State the mode of preparation, the properties and uses of *chlorinated lime* or *bleaching powder*.

4. How would you detect *iodine* in *iodides*, and how may the element be obtained from an iodide?

5. Name *alkali metals*, and describe two important compounds of any one of them.

(B) 1. Describe the *germination of a seed*, such as that of maple.

2. Draw a *leaf* answering to the following description:—*cordate*, *margin serrate*, *apex acute*.

3. Describe fully the structure of *apple fruit* or *pome*.

4. What are *root stocks*, and how may they be distinguished from true roots?

5. Name Canadian plants that bear:—*bilabiate corollas*, *catkins*, *spadix samara*, *drupe*.

OPTIONAL SUBJECTS.

GREEK.

Examiner,.....H. ASPINWALL HOWE, M.A., LL. D.

1. Translate, *without unnecessary change of construction*, the following extract from the Anabasis of Xenophon:—

Τὸ δὲ σύμπαν δῆλος ἦν Κῦρος ὡς σπεύδων πᾶσαν τὴν ὁδὸν καὶ οὐ διατρίβων, ὅπου μὴ ἐπισιτισμοῦ ἕνεκα ἢ τινος ἄλλου ἀναγκαίου ἐκαθέζετο, νομίζων, ὅσῳ μὲν ἂν θᾶττον ἔλθοι, τοσούτῳ ἀπαρασκευαστοτέρῳ βασιλεῖ μαχεῖσθαι, ὅσῳ δὲ σχολαιότερον, τοσούτῳ πλέον συναγείρεσθαι βασιλεῖ στράτευμα. Καὶ συνιδεῖν δ' ἦν τῷ προσέχοντι τὸν νοῦν ἡ βασιλέως ἀρχὴ πλήθει μὲν χώρας καὶ ἀνθρώπων ἰσχυρὰ οὖσα, τοῖς δὲ μήκεσι τῶν ὁδῶν καὶ τῷ διεσπάσθαι τὰς δυνάμεις ἀσθενὴς, εἴ τις διὰ ταχέων τὸν πόλεμον ἐποιεῖτο. Πέραν δὲ τοῦ Εὐφράτου ποταμοῦ κατὰ τοὺς ἐρήμους σταθμοὺς ἦν πόλις εὐδαίμων καὶ μεγάλη, ὄνομα δὲ Χαρμάνδη· ἐκ ταύτης οἱ στρατιῶται ἠγόραζον τὰ ἐπιτήδεια σχεδίαις διαβαίνοντες ὧδε· διφθέρας, ἃς εἶχον στεγάσματα, ἐπίμπλασαν χόρτου κοίφου, εἶτα συνῆγον καὶ συνέσπων, ὡς μὴ ἅπτεσθαι τῆς κάρφης τὸ ὕδωρ· ἐπὶ τούτων διέβαινον καὶ ἐλάμβανο τὰ ἐπιτήδεια, οἶνόν τε ἐκ τῆς βαλάνου πεποιημένον τῆς ἀπὸ τοῦ φοίνικος καὶ σιτον μελίνης· τοῦτο γὰρ ἦν ἐν τῇ χώρᾳ πλεῖστον.

2. Parse πᾶσαν τὴν ὁδόν, ἔλθοι, ἐκαθέζετο, διεσπάσθαι, μὴ. εσι. Decline such of these as are declinable.

3. Give the 1st pers. sing. of the Present, Future, Perfect and 1st or 2nd Aorist Indicative of the verbs ἔλθοι, συνιδεῖν, εἶχον, ἐπίμπλασαν, διέβαινον.

4. Write in order the Positive, Comparative and Superlative of.—θᾶττον, πλέον, ἰσχυρά, εὐδαίμων, μεγάλη.

5. Write short notes explanatory of :—

(*a*) σπεύδων πᾶσαν τὴν ὁδόν· Why is the accusative used ?

(*b*) τὰς δυνάμεις ἀσθενὴς. In what case is δυνάμεις and why ?

(*c*) ἃς εἶχον στεγάσματα. Explain the case στεγάσματα.

(*d*) ἐπίμπλασιν χόρτου κοίφου. Why genitive ? Give the Rule.

(*e*) ἅπτεσθαι τῆς κάρφης. Why genitive again ? What is the Rule ?

FRENCH.

Examiner,.....H. ASPINWALL HOWE, M.A., LL.D.

1. Translate, *as closely as difference of idiom will admit :*

Trois puissants rois menaçaient ainsi l'enfance de Charles XII. Les bruits de ces préparatifs consternaient la Suède, et alarmaient le conseil.

Les grands généraux étaient morts ; on avait raison de tout craindre sous un jeune roi qui n'avait encore donné de lui que de mauvaises impressions. Il n'assistait presque jamais dans le conseil que pour croiser les jambes sur la table ; distrait, indifférent, il n'avait paru prendre part à rien.

Le conseil délibéra en sa présence sur le danger où l'on était : quelques conseillers proposaient de détourner la tempête par des négociations ; tout d'un coup le jeune prince se lève avec l'air de gravité et d'assurance d'un homme supérieur qui a pris son parti : " Messieurs, dit-il, j'ai résolu de ne " amais faire une guerre injuste, mais de n'en finir une légitime que par la " perte de mes ennemis. Ma résolution est prise ; j'irai attaquer le premier " qui se déclarera ; et quand je l'aurai vaincu, j'espère faire quelque peur aux autres." Ces paroles étonnèrent tous ces vieux conseillers ; ils se regardèrent sans oser répondre. Enfin, étonnés d'avoir un tel roi, et honteux d'espérer moins que lui, ils reçurent avec admiration ses ordres pour la guerre.

2. May the indefinite pronoun *on* be used as a feminine and as a plural? Give two examples shewing either that it can or that it cannot. When is *l'on* used instead of *on?*

3. What is the distinction between *conjunctive* and *disjunctive* personal pronouns? Illustrate your answer by examples introducing *il* and *lui.*

4. When is *some* translated by *quelques* and when by *des?* and when is *de* used for *des.* Give examples.

5. Write out the Present of *s'en aller*, the Imperfect of *prendre*, the Past Definite of *craindre* and the Future of *faire*, all in the Indicative mood. Write out also the Present and Imperfect Subjunctive of *dire.*

6. Write a few phrases shewing the idiomatic use of the verbs *faire* and *venir.*

SESSIONAL EXAMINATIONS, 1886.

THEORY AND PRACTICE OF MEDICINE.

Examiner,.....PROF. R. PALMER HOWARD, M.D., L.R.C.S.E.

1. Describe briefly the cutaneous eruptions of the Fevers, stating the periods of their manifestation.

2 Give the important complications of Typhoid Fever and their treatment.

3. Sketch the symptoms of Diabetes Mellitus.
What are the symptoms and probable cause of Diabetic Coma?

4. Describe the clinical features and treatment of Inflammation of the Cæcum.

5 Explain the kinds of murmur that may be heard in the cardiac region in Rheumatic Fever and the prognosis in each.

6. Capillary Bronchitis—its physical signs and treatment in a child of three years?

7. Describe briefly the gross alterations of the lungs in acute Pneumonic and in acute Miliary Phthisis?

8. The co-existence of Icterus and Ascites suggests either of two diseases. Give the diagnosis between them.

9. What are the symptoms of acute Anterior Polio-Myelitis?

In what other affections of the cord do similar structural changes occur?

10. A man, aged 65, is found in bed insensible, but not profoundly comatose, with right hemiplegia. The temperature in the mouth is normal, or not over 99°F.—the radials somewhat beaded—the heart's sounds free from murmur and its impulse rather weak—traces only of albumen in the urine. He had complained of tingling in right hand for a fortnight before present illness. What conditions may be present, and what is the most probable diagnosis and the reasons for it?

PRINCIPLES AND PRACTICE OF SURGERY.

Examiners,..... { Prof. G. E. Fenwick, M.D.
" F. Buller, M.D., M.R.C.S., Eng.

1. Fracture of the base of the skull. What accidents might produce this injury. Describe the symptoms, treatment to be followed, and probable results.

2. What course does the Urine take in perineal infiltration. Describe the attachment of the tissues which limit the extravasation in ordinary cases.

3. Carbuncle, what is it? Describe its situation, pathology, symptoms, and treatment.

4. What course does the brachial artery follow down the arm? What is its relative position to contiguous muscles, nerves and veins, and where would you ligate it, if necessary.

5. Burns and scalds. What are the differences between these two forms of injury? What conditions render them more or less dangerous. Give the constitutional symptoms attending extensive burns or scalds. Mention the most probable causes of death in fatal cases, and describe the treatment you would adopt, both local and general.

6. How is fracture of the humerus at the elbow-joint usually produced; what other injury does it simulate? Describe the symptoms, treatment, and probable results.

7. What is the shape, and what are the boundaries of the Ischio-rectal Fossa, and what parts of importance are found therein.

8. To what may Bubo in the groin be attributed, and how would the clinical history guide you in its treatment and probable prognosis.

9. Give the differential diagnosis in Conjunctivitis, Keratitis, and Iritis.

10. Foreign bodies in the external auditory canal. How would you proceed in the management of such cases.

(*a*) As to diagnosis.

(*b*) As to treatment.

CHEMISTRY.

Examiner, ... PROF. G. P. GIRDWOOD, M.D., M.R.C.S.E.

1. What weight of copper is necessary to decompose sufficient sulphuric acid to yield 5.52 litres of sulphur dioxide?

2. Write equations for the preparation of a compound of Hydrogen, with (1) Nitrogen, (2) Sulphur, (3) Phosphorus, (4) Arsenic, (5) Silicon.

3. With what other elements are (*a*) Sulphur, (*b*) Manganese grouped? For what reasons are they so grouped?

4 Give chief Chemical and Physical properties of (*a*) Sodium, (*b*) Nitrous Oxide, (*c*) Arsenic Oxide, (*d*) Carbon Disulphide.

5. Compare by graphic formulæ the following classes of organic compounds:—(*a*) Amides, (*b*) Amines, (*c*) Cyanides.
Construct an homologous series of either class.

6. How are Chloral and Sulphuric Ether made?
How is Chloral changed into Chloroform?
What is the vapour density of Ether?

PHYSICS.

Examiner, ... G. P. GIRDWOOD, M.D.

1. Describe the physical properties of matter.

2. What are the different conditions in which we find matter, and the causes which modify them?

3. Describe the physical and chemical properties of the atmosphere.

4. Show the relation between specific heat, atomic heat, and latent heat.

5 What is meant by a primary and secondary current?
Describe the difference between them.

CHEMISTRY.

(EXAMINATION FOR THE SUTHERLAND MEDAL.)

Examiner, ... DR. GIRDWOOD

1. How would you determine the atomic weight, valence and equivalent weight of oxygen. Give the reasons for the processes employed.

2. What changes take place in (*a*)the simple and in (*b*) the compound battery during the evolution of one litre of oxygen from acidulated water.

3. Give a scientific arrangement of the oxides, showing their relation to water, and the combinations of their Hydrates with one another.

4. Describe the periodic law of Mendelejeff.

5. Describe the mode of estimating the quantity of urea in a given sample of urine, tracing out the action of the reagents employed and the means to obviate error in the result.

6. Show how you can make a nitro-substitution compound from a monatomic, diatomic and a triatomic alcohol.

GYNÆCOLOGY.

Examiner,.....PROF. GARDNER.

1. Enumerate and describe briefly the principal modes of examination of uterine disease.

2. Give briefly the causes, symptoms, course, and treatment of pelvic cellulitis and peritonitis.

3. The symptoms, physical signs, and diagnosis of uterine myoma.

4. The causes and treatment of menorrhagia.

N.B.—State the doses of medicines suggested.

ANATOMY.

Examiners,..... { PROF. FRANCIS J. SHEPHERD, M.D.
LECT. RICHARD L. MACDONNELL, B.A., M D.

1. Give a short description of the course and relations of the large vessels entering the right auricle of the Heart, and mention their mode of formation.

2. Give the dissection necessary to expose the ulnar artery.

3. Œsophagus, its course and relations.

4. Name, in their proper order, the muscles forming the boundaries of the Popliteal space, and give the origin, insertion, actions and nerve supply of each muscle mentioned.

5. Mention the Bones entering into the formation of the Ankle Joint and give a short description of one of them.

6. Describe the course and distribution of the Hypoglossal nerve.

OBSTETRICS.

Examiner,.....PROF. BROWNE.

1. Describe the management of a case of labour by the Breech, when there is undue delay in expulsion.

2. Describe the management of difficult labour from unyielding cervix uteri.

3. Give the treatment of primary post-portum hæmorrhage.

4. What are the signs of pregnancy available at the end of the fourth calendar month?

5. Describe the operation of turning by the combined external and internal method.

6. What is meant by Placenta Prævia, and what treatment would you adopt for this condition at the time of labour?

MATERIA MEDICA AND THERAPEUTICS.

Examiner, ...PROF. JAMES STEWART, M.D.

1. Name the drugs that influence the secretion of bile.

What practical applications can be made of agents possessing these properties?

2. Describe fully two or more methods by which the following drugs may be introduced into the circulation: Mercury, Iodine, Cod Liver Oil, Iron, and Arsenic.

3. What symptoms result from the deposition of Lead, Mercury and Arsenic in the different tissues?

What tissues are especially liable to be the seat of these poisons?

What measures would you resort to to get rid of them?

4. Compare the antipyretic actions of Quinine, Salicylic Acid, Antipyrin and Thallin.

5. Compare the purgative actions of Castor Oil, Elaterium, Iridin and Sulphate of Magnesia.

6. Mention the more important uses of Iron and Arsenic.

Compare the hæmatinic action of these agents.

MEDICAL JURISPRUDENCE.

Examiner,.....PROF. WILKINS, M.D.

1. What are the chief medico-legal questions involved in a case of suspected infanticide?

How would prove or disprove these?

2. What are the symptoms and post-mortem appearances of asphyxia?

How may these appearances be modified by circumstances?

3. What forms of poisoning may be mistaken for symptoms of disease and *vice versa?*

4. What are the symptoms of poisoning by oxalic acid?

5. Describe *Melancholia.*

HISTOLOGY.

Examiner,.....PROF. G. WILKINS, M.D., M.R.C.S., ENG.

1. Describe the structure of lymphatic vessels and glands. Where found? Name some lymph glands.

2. Describe a medullated nerve-fibre.

3. Describe the mucous and submucous coat of the digestive tract, commencing at the œsophagus and terminating in the large intestine.

HYGIENE.

Examiner,.....R. L. MACDONNELL, B.A., M.D.

1. Enumerate the causes of the diarrhœal diseases of infancy?

2. In the town in which you are practising a stranger arrives by steamboat who is suffering from symptoms which you believe are those of mild varioloid. What measures would you take. (*a*) As regards the patient. (*b*) To protect others?

3. *Milk.* (*a*) Its characters when pure.

(*b*) The ordinary adulterations and the means of detecting them.

(*c*) The causes of unwholesomeness.

4. What are the advantages and disadvantages as a means of warming of:—

(*a*) An open fire place; (*b*) a stove fed with wood; (*c*) hot air from a furnace in the basement; (*d*) hot water pipes; (*e*) steam pipes?

PRACTICAL ANATOMY.

(THE DEMONSTRATOR'S PRIZE.)

Examiners,..... { R. L. MACDONNELL, B.A., M.D.
W. SUTHERLAND, M.D.
R. J. B. HOWARD, B.A., M.D.

1. The head being divided in the middle line, give, in their order, the parts found in dissecting from within outwards to the surface, the region bounded by the horizontal plate of the ethmoid and body of the sphenoid above, the palate below, the posterior border of the internal pterygoid plate behind, and the nasal duct in front.

2. Describe that portion of the under surface of the base of the skull which is bounded in front by a horizontal line drawn through the roots of the pterygoid plates and behind by a line between the points of the mastoid processes; and then mention in their order from before backwards the several structures in direct relation.

3. A horizontal section of the thorax is made at the level of the 4th costal cartilage. Name in order the parts divided.

GENERAL PATHOLOGY.

Examiner,.....W. G. JOHNSTON, M.D.

1. In what localities and under what circumstances does fatty degeneration occur, and how is its presence recognized?

2. How may past or present disease modify an existing disease? Give examples.

3. Name the causes, source and consequences of the principal forms of embolism.

4. What constitutes malignancy in a tumor?

5. What are the histological appearances met with in the later stages of an inflammation. How may inflammation terminate? Describe in detail the phenomena of repair.

6. In what ways may bacteria act injuriously upon the body? Give examples.

7. Sketch the life history of Tænia Solium.

PHYSIOLOGY.

Examiner,.....T. WESLEY MILLS, M.A., M.D.

1. *Electric Currents of Muscle and Nerve*:—

(*a*) Principal facts. (*b*) Different views as to their nature. (*c*) Arguments advanced *pro* and *con*. (*d*) State how the degree of irritability of a nerve may be made to vary. (*e*) The bearing of this on medical practice.

2. *The Heart-beat in the mammal*:—

(*a*) Different conditions causing it to vary. (*b*) The explanation of these. (*c*) Influence of these variations on blood pressure.

3. *Suppose the Blood Pressure being taken in the Carotid Artery of a rabbit*:—

(*a*) Define the conditions associated with decided rise and fall of blood pressure. (*b*) Explain the causes of the latter (fall).

4. *Digestive Functions of Bile, and theories of Fat absorption*:—

(*a*) Functions of the bile in digestion. (*b*) Evidence for your views. (*c*) Theories of fat absorption with special reference to Schafer's. (*d*) On what foundation do these theories rest?

5. *Blood coloring matters*:—

(*a*) The principal kinds known. (*b*) Conditions under which found. (*c*) Under what form expelled from the body. (*d*) The grounds on which your statements are based.

6. *Secretion of urine* :—

(*a*) Different views as to the secretion of the solids and the water of the urine respectively. (*b*) The experimental evidence on which these views are founded.

7. *Fat in the mammal* :—(*a*) How laid up. (*b*) Why so variable in quantity. (*c*)Source and formation. (*d*) Importance. (*e*) The grounds for your views in every case.

8 *Movements of the Iris* :—(*a*) Muscular mechanisms. (*b*) Nervous Mechanisms. (*c*) Experimental evidence on which your views of the latter are founded. (*d*) Difficulties to be met.

9. *The Cord is divided in a dog in the lower dorsal region* :—

(*a*) The various immediate consequences. (*b*) The permanent ones. (*c*) The functions of the cord that remain finally intact (*d*) Explanation of the above and the experimental demonstration of the same.

10. *Explain the origin of the following structures*:—(*a*) Spinal cord and brain. (*b*) Amnion. (*c*) Allantois. (*d*) Heart. (*e*) Ovary. (*f*) Bladder. (*g*) Eye.

11. *A patient has the following symptoms*:—(*a*) Sees double. (*b*) Has drooping of right upper eyelid. (*c*) One corner of mouth drawn up (*d*) Tendency to inflammation of nasal mucous membrane. (*e*) Difficulty in articulation. Assuming these all to be due to nervous derangements, diagnose the case on purely physiological principles?

N.B. (1) Only six questions to be answered.

(2) In estimating the value of the answers to the above questions special attention will be paid to the *handling* of the facts and the *quality* of the work rather than to an enumeration of facts merely.

(3) The judicious use of diagrams will be considered of special importance.

BOTANY.

Examiner,.....D. P. PENHALLOW, B.Sc.

1. Explain the process of nutrition.

2. Explain the physiological movement of water and its relation to growth.

3. Explain respiration.

4. Compare the functions of Metastasis and Assimilation.

5. Explain the functional value of Antherozoids, Embryo Sac, Archegonium and Pollen grain.

6. Explain the functional value of the Prothallus, and show its equivalent in the Phenogams.

FACULTY OF ARTS.

N.B. The time allowed for each Examination in the following Papers is with few exceptions three hours; 9–12, a. m., and 2–5 p.m.

SCHOLARSHIPS AND EXHIBITIONS, 1885.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

GREEK.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. Translate :—Demosthenes, Olynthiacs, III. § 34 ;—*καὶ ταῦτ' οὐχ ἵν' ἀπέχθωμαι * * * ἐξέστι γενέσθαι.*

2. (*a*) Explain the formation, and give the meaning of :—*πανδημεί, τηνάλλως, τοιαυτί, κομιδῆ, ἐπιεικῶς, ὡ τᾶν.* (*b*) *οὐ μὴν ἀλλά, εἰς μακράν* :—supply the ellipses in these phrases, severally. (*c*) Point out the metaphors in :—*τιθασεύσουσι, χειροήθεις, ἐκνενευρισμένοι, προπέποται, συγκεκροτημένοι, ὡρᾶται, καταρρεῖ, ἀνεχαίτισε.* (*d*) Explain the use of the Aorist in such expp. as :—*ἅπαντα ἀνεχαίτισε καὶ διέλυσεν.*

3. Translate :—Thucydides, Bk. VI., chap. xxxi.

4. (*a*) Comment on the meaning of *πρώτη* with *παρασκευὴ αὕτη ἐκπλεύσασα*, and give the dates of the other expeditions here referred to. (*b*) *οὗτος ὁ στόλος*,—supply the verb to this nominative. (*c*) *ὅπως * * * προέξει*,—explain this use of the Fut. Ind. with *ὅπως*. (*d*) *ὑπὸ κήρυκος, ἐπὶ κέρως, πρὸς τὰ ὑπάρχοντα, ἐπὶ μεταβολῇ* :—Give as accurately as you can the import of the prepositions as here used.

5. Write explanatory notes on :—(1) *τριηράρχων.* (2) *ὑπηρεσιᾶς.* (3) *θρανίταις.* (4) *σημεῖοις.* (5) *καταλόγοις χρηστοῖς.* (6) *ἐπιβάται.*

6. Translate :—Xenophon, Hellenics, Bk. I., chap. vi., secs. 29–31.

7. (*a*) In what year of the Peloponnesian war did the events here recorded take place ? (*b*) Give the geographical situation of Arginusae, with a plan of the hostile fleets as here described.

8. Translate, Herodotus, Bk. VIII., chaps liv–lv. For *ἐμπρήσαντα* there is a *var. lect.* *ἐμπρήσαντι* :—both are correct ; but which is the preferable reading, and why ?

9. Translate :—(A) Euripides, Medea, vss. 1251–1270.

10. (*a*) Give the order and explain the construction of the last three verses of the above extract. (*b*) Point out any Ionic forms that occur in the same ext. (*c*) Give the Attic equivalents of the following Doricisms :—σᾶς, γονᾶς, μάταν, κυνανεᾶν, πετρᾶν, ἀχᾶν, τάκον, δυνάσει, Ἀιδα.

LATIN.

Examiner,.....Rev. George Cornish, LL.D.

1. Translate :—(A) Tacitus, Annals, Bk. I., chap. lviii.

2. (*a*) Turn the first two sentences in the above ext. into the *Orat. obliqua*, stating the general rules for this. (*b*) In the clause *Verum quia* * * * *probabam*, what is omitted, and where is there zeugma? (*c*) *Illa nox* :—explain. (*d*) *Tui copia* :—complete the phrase. (*e*) *Arminius* :—Give the German form of this.

3. (*a*) Characterize the style of Tacitus in respect of its leading features. (*b*) Define the term *Annales*. (*c*) What period of Roman history is included in the Annals?

4. Translate, Pliny, Select Letters :—Ridebis et licet rideas. Ego ille quem nosti apros tres et quidem pulcherrimos cepi. Ipse? inquis. Ipse; non tamen ut ommino ab inertia mea et quiete discederem. Ad retia sidebam; erat in proximo non venabulum aut lancea, sed stilus et pugillares; meditabar aliquid enotabamque, ut, si manus vacuas, plenas tamen ceras reportarem. Non est quod contemnas hoc studendi genus : mirum est ut animus agitatione motuque corporis excitetur. Iam undique silvae et solitudo, ipsumque illud silentium, quod venationi datur, magna cogitationis incitamenta sunt. Proinde cum venabere, licebit auctore me ut panarium et lagunculam sic etiam pugillares feras : experieris non Dianam magis montibus quam Minervam inerrare. Vale.

5. Derive and describe :—venabulum, lancea, stilus, pugillares, panarium, lagunculam.

6. Translate, Virgil, Georgics, I., vss. 450-468.

7. (*a*) Scan the following vs., noting peculiarities :—

"Glauco et Panopeae et Inoo Melicertae."

(*b*) In 456 account for the quantity of the penult of *fervere*. (*c*) *Immixerier* :—parse, and give equivalent later form. Cite other archaic forms used by Virgil. (*d*) What physical event is referred to in vss. 467-69? (*e*) Derive and parse the word *Georgicon*, and state to what class of poetry the Georgics belong, and name the Greek writer whom Virgil took as his model in writing them.

8. Translate, Horace, Epistles, Bk. I. ep. xviii., vss. 1—20.

9. (*a*) Construe *amicum*. (*b*) Scan vs. 3, pointing out any peculiarity of quantity in *meretrici*. (*c*) *Discolor* :—explain the custom here referred to. (*d*) *Infido scurræ* :—explain the construction. (*e*) *Imi lecti* :—explain, and illustrate by a sketch of the arrangement of the Roman dinner-table. (*f*) *Magistro* :—with what do you construe this? (*g*) *De lana caprina* : —Explain. (*h*) *Pretium* :—What case?

10. Translate, Terence, Adelphi, Act iv., Scene 4, introducing an explanatory note where you think it necessary.

11. Parse, and write down the full forms, of :—erepsemus, surrexe, rere, submosses, peccaro, siit, operiere, consolere, reprensum, insuerit, cedo, sodes.

GREEK AND LATIN PROSE COMPOSITION.

Examiner,..... .....Rev. George Cornish, LL.D.

(A) Translate into Greek :—

1. After this battle the Athenians did very great injury to the whole country of the Lacedæmonians.

2. The soldiers marched out of the city in number about two thousand, and in no long time arrived in the enemy's country, which they at once began to ravage.

3. Man seems to differ from other animals in this, namely, in his striving after honour.

4. He said that he was willing to do those things, if by so doing he could benefit his fellow-citizens.

5. The being rich profits men nothing if they do not know how to make a wise use of their wealth.

(B) Translate into Latin :—

C. Marcus wished to turn a time of famine to account by wrenching from the plebs their newly-won constitution, as the price of bread. But the plebs determined to hurl him from the Tarpeian Rock; and to save him from his fate, the Senate consented to drive him into banishment. He took refuge with his country's enemies, the Volsci, and, kindly received by their chieftain, Attius Tullius, he rose to high position in their armies. Town after town of the Latin league fell before his arms, and at last he marched on Rome itself. In vain the terrified Senate sent embassies to arrest his steps. At length when he was only four miles from the city, his aged mother, Veturia, and his young wife, Volumnia, came with a lamentable company of women, beseeching him to turn back. He could resist his wife and children, but not his mother. "Mother, thou hast conquered me," he said; "but hast brought me to misery." He departed and died in exile. On the Latin way, where he turned his foot from attacking his country at the instance of a woman's prayer, was built the temple of Fortuna Muliebris which stood, even when the republic had fallen, a witness to the filial obedience which formed so striking a feature of the "ancient men and manners."

ANCIENT HISTORY.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. (*a*) Give the derivation and proper meaning of the term *History*, and name the parts into which History is divided. (*b*) What are the sources of written History as enumerated by Rawlinson? (*c*) What are the cognate sciences with History? Show their importance.

2. Give the dates in Jewish history of (*a*) the Exodus; (*b*) the reign of Saul; (*c*) the Revolt of the Ten Tribes; and (*d*) the Babylonian Captivity. (*e*) State the leading events in the second period of the history of the Jews. Under what King did the nation reach its highest point of power and prosperity? What causes led to its decadence?

3. To what family of the human race did the Phœnicians belong? Give an account of their religion, trade, and commerce, illustrating your remarks by passages from the Scriptures.

4. What were, severally, the origin, duration and end of the Persian Empire? What took its place?

5. What were the leading states of Greece at the time of the Persian War, and what part did they severally take? What important results followed this war?

6. Explain the origin and meaning of the phrases;—*Patres Conscripti*; *Populus Romanus*; *Quirites*; *Plebs*.

7. Give an account of the Law of Debt at Rome, and point out how its operation acquired political importance and led to political changes.

8. What was the real character and object of the *Leges Agrariae* at Rome? Define the terms *Ager publicus* and *Possessio*.

9. Trace the most important political events and constitutional changes at Rome, with dates, from the period of the expulsion of the Kings down to the Punic wars.

10. Name the date and the alleged pretext of the second Punic war. Can you point out any facts in the condition of Italy, and in the relations between its people and Rome, that gave encouragement to Hannibal?

11. When and why did the Romans first take a part in the affairs of Greece?

FRENCH.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Translate into English:—

Henriette.—Je sais le peu de bien que vous avez Clitandre;
Et je vous ai toujours souhaité pour époux,
Lorsqu'en satisfaisant à mes vœux les plus doux,
J'ai vu que mon hymen ajustait vos affaires;
Mais lorsque nous avons les destins si contraires,

Je vous chéris assez dans cette extrémité
Pour ne vous charger point de notre adversité.
Clitandre.—Tout destin, avec vous, me peut être agréable,
Tout destin me serait, sans vous, insupportable.
Henriette.—L'amour dans son transport, parle toujours ainsi,
Des retours importuns évitons le souci.
Rien n'use tant l'ardeur de ce nœud qui nous lie,
Que les fâcheux besoins des choses de la vie ;
Et l'on en vient souvent à s'accuser tous deux
De tous les noirs chagrins qui suivent de tels feux.

MOLIÈRE, *Les Femmes Savantes*, A. Sc. 5.

2. What society did Molière turn into ridicule in les *Femmes Savantes?* What other pieces of the same kind had he already written?

3. Describe six characters of that comedy.

4. Give a short synopsis of Britannicus. In what author did Racine take the most part of that tragedy?

5. Describe four characters of that tragedy.

6. Explain the two different ways to translate into French the English word *must;* take as example:—*I must go to town.*

7. How do you translate *it is:* 1. before an adjective; 2. before an adjective with a noun; 3. before a pronoun? Translate as examples:—It is noble to die for one's country. It is a noble thing to die for one's country. Is it you?

8. Translate into French the following sentences, and explain how the past participles are to be written:—My brothers have read the books which you have lent them, and spent the dollars which you have given them. Those ladies have written letters to one another every week.

9. Has Louis XIV done much for French literature? Give some development to your answer.

10. Who were the two greatest writers of the XVIth century? Mention their works.

11. Translate into French:—

The clock has just struck nine. The family are rising from the breakfast-table. A ring at the door-bell. The servant enters, Sir, a young man, Mr. A.'s clerk, has called, and hopes you will not be offended, but he would feel particularly obliged if you could settle his account. He called twice last week. He would not trouble you if it were not a case of necessity. Necessity or no necessity, I have not a minute to spare, replied the gentleman, with a shrug of his shoulders, whilst giving the last pull to his great-coat as he was putting it on. I am going by the next train, so bid him to call again.

S. CLARENCE, *Not a minute to spare.*

ENGLISH LITERATURE:—*Spalding and Trench.*

Examiner,.....CHAS. E. MOYSE, B.A.

1. Criticise the Faerie Queene, and mention some of the more important characters in it.

2. Sketch the career of John Dryden.

3. Choose ten writers of the seventeenth century, and mention a work of each, with a note or two concerning it.

4. Who wrote The Botanic Garden, The Minstrel, The City of the Plague, Caleb Williams, Essays of Elia? Take the last three writers of your answer and mention another work of each.

5. Arrange the chief theologians and historians of the eighteenth and nineteenth centuries in two columns, and opposite each write the name of one of his works.

6. Give Spalding's estimate of the place of Wordsworth in our literature.

7. Contrast in general terms the Elizabethan, the Augustan, and the Victorian ages of our literature, by examining authors whom you consider typical.

8. Show that the language of the savage bears witness to his degradation. How does Trench answer complaints as to the number of new theological terms used in controversy?

9. Notice words that bear testimony to great moral truths.

10. Make notes on the words Gothic, Renaissance, Gnostics, capuchin, quince, book, marshal, alderman, Christian, mob, gamin. Instance words whose etymologies are lost.

11. Examine several pairs of words whose etymologies point to similar meanings, but whose meanings are found to be slightly different.

12. How would you reply to Trench's arguments against Phonetic spelling?

ENGLISH LITERATURE:—*Milton and Shakespeare.*

Examiner,.....CHAS. E. MOYSE, B.A.

1. Give the substance of Milton's invocation.

2. Select from the First Book of Paradise Lost passages which describe Satan and his equipment.

3. Describe the building of Pandemonium.

4. Tell what you know about Satan's journey after leaving Hell, so far as it is described in the Second Book of Paradise Lost.

5. Explain the meanings of the words in italics, and account for them :— *study* of revenge ; if I *fail* not ; *afflicted* powers ; *oblivious* pool ; *abject* and lost ; *beneath* Gibraltar to the Libyan sands ; deliberate valour breathed ; firm and *unmoved ; considerate* pride ; let none *admire ;* That..... ; *fretted* gold.

6. Explain the following allusions :—

As when Alcides from Œchalia crown'd
With conquest, felt th'envenom'd robe.....
And Lichas from the top of Œta threw
Into th' Euboic sea.

That Serbonian bog ; Gorgonian terror ; Ternate and Tidore ; Trinacrian shore ; Ophiuchus huge ; a boggy Syrtis ; the Arimaspian ; the justling rocks. Say, when you can, where they occur.

Give the names of the four infernal rivers, and Milton's expression of their etymology.

7. Discuss the Tempest in regard to dramatic construction and contemporaneousness.

8. Notice a few important points in Shakesperian English that you have learned from your reading of the Tempest, and illustrate them by quotations from the play.

9. Trace Miranda and Gonzalo through the play.

10. Sketch the outline of any Act except the First or, more fully, any important Scene with which you are familiar.

THE ANNE MOLSON MATHEMATICAL PRIZE.

(I) GEOMETRY OF THREE DIMENSIONS.

Examiner,..... ....ALEXANDER JOHNSON, LL.D

1. Find the surface generated by a right line which always meets three fixed lines which are all parallel to the same plane.

2. Show directly from the equation of the hyperboloid of one sheet that right lines lie on the surface.

3. Through a given radius of a central quadric there can in general be drawn one section of which the radius shall be an axis.

4. The parallelopiped whose edges are three conjugate semi-diameters of an ellipsoid has a constant volume.

5. Find the condition that the plane $Ax + By + Cz + Dw$ should touch the quadric given by the general equation.

6. Find the equation of the tangent cone from the point $x'\ y'\ z'$ to the surface $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c_2} =$

7. Define diametral plane, and find the equation of the diametral plane conjugate to a given line.

8. Find the equation of the tangent plane at any point $x' y' z'$ of a

9. Find the equation of the plane through a given point perpendicular

10. Find the direction cosines of the bisector of the angle between two

11. Find the equation of the plane passing through $x' y' z'$, and through the intersection of the planes $Ax + By + C2 + D$ and $A' x + B'y + C'2 + D'$.

12. Given two lines, find the equation of a plane drawn through either parallel to the other.

(II) CALCULUS.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Find the transformation of

$$\frac{d^2 V}{d x^2} + \frac{d^2 V}{d y^2} + \frac{d^2 V}{d z^2}$$

into a function of r, θ, and ϕ, being given

$$x = r \sin \phi \cos \theta, \; y = r \sin \phi \sin \theta, \; z = r \cos \phi.$$

2. Eliminate by differentiation

1°. a and b from the equation

$$(x-a)^2 + (y-b)^2 = c^2,$$

2°. The exponential and logarithmic functions from

$$y = log\,(e^x + e^{-x}),$$

3°. The arbitrary function ϕ from

$$\frac{1}{z} - \frac{1}{x} = \phi\left(\frac{1}{y} - \frac{1}{z}\right).$$

3. Prove that in the cycloid the *radius* of *curvature* is double the normal, previously finding the equation of the curve.

4. Prove that the *evolute* of a logarithmic spiral is another logarithmic spiral.

5. Prove that the *envelope* of a system of concentric and co-axl ellipses of constant area is an equilateral hyperbola.

6. If u be a homogeneous function of the n^{th} degree in x and y, not involving fractions, prove (Euler's Theorem) that

$$x \frac{d u}{d x} + y \frac{d u}{d y} = n u.$$

7. Define *moment of inertia*, and investigate the equation of the *momental ellipsoid* for any point of a given body.

8. Find the moment of inertia of an ellipsoid with regard to one of its axes

9. Prove that if dS be the element of any closed surface, and r be the radius vector from an origin inside the surface to any point, γ being the angle which r makes with the internal normal, and if the integral be extended over the whole surface we have

$$\int\int \frac{\cos\gamma \, dS}{r^2} = 4\pi.$$

10. Prove that the volume of the ellipsoid whose axes are a, b, c, is $\frac{4}{3}\pi abc$.

11. The base of a cylinder is a circle whose area is equal to the surface of a sphere of radius 5 feet; being given that the volume of the cylinder is equal to the sum of the volumes of two spheres of radii 9 feet and 16 feet, find the height of the cylinder.

12. Investigate Lambert's Theorem, showing that the area of any focal sector of an ellipse can be expressed in terms of the focal distances of its extremities, of the chord which joins them, and of the axis of the curve.

(III) MECHANICS.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. A flexible and inextensible string acted on by terminal forces only is stretched over a *rough* surface, find the work done against friction for a given small arc of slipping.

2. Prove that the work done in dragging a heavy body up a rough inclined plane, without acceleration, by a force parallel to the plane, is equal to the work done in dragging it along the base of the plane (supposed equally rough), together with the work done in lifting it vertically through the height of the plane.

3. From the principle of virtual work deduce the six equations of equilibrium of a rigid body acted on by any forces.

4. A section of a sphere is made by any two parallel planes; prove that the centre of gravity of the spherical surface (of uniform thickness and density) included is midway between them.

5. Prove analytically that if the mass of each of a system of bodies be multiplied by the square of the distance of its centre of gravity from a given point, the sum of the product thus obtained is least when the given point is the centre of gravity of the system of bodies.

6. A sphere and a cone, each resting on a smooth inclined plane, are placed in contact; find the position of equilibrium of the system, and the reactions of the planes.

7. Prove Bonnet's theorem, that if masses m, m', m'', etc., respectively acted on by forces, F, F', F'', etc., and starting all in the same direction from a point A, with velocities V, V', V'', describe the same curve, then the same path will also be described by the mass M, when projected from the same point in the same direction, and subject to the action of all the forces, F, F', F'', etc., provided the initial *vis viva* $M\ V_0^2$ is equal to

$$m\ v_0^2 + m''\ v_0'^2 + m''\ v_0^2 + \&c.,$$

the sum of the *vires vivae* of the different masses.

8. If a particle be acted on by a repulsive force, varying as the inverse square of a distance, prove that the orbit is a branch of an hyperbola having the centre of force in the focus external to the orbit.

9. Prove the expression for the velocity of a particle moving in an elliptic orbit, (r being the focal radius vector).

$$v^2 = \frac{2u}{r} - \frac{\mu}{a},$$

10. Define *harmonic motion, amplitude period, epoch, phase.* If two harmonic motions in the same line have equal amplitude (a) and equal periods, but different epochs, e', e', find the amplitude of their resultant.

11. Find the centre of pressure of a quadrant of a circle just immersed in a heavy homogeneous fluid, with one edge in the surface.

12. A hemispheric bowl is filled with water, find the whole pressure on its surface.

(IV) ASTRONOMY—OPTICS.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. If E, M, S, be the masses of the earth, moon and sun, respectively, and $E = 80\ M$, $S = 322000\ E$, show that the effect of the moon in producing tides is about $2\frac{1}{5}$ times as great as the sun's.

2. Find when Venus appears brightest.

3. Prove that the effect of aberration is to make the stars appear to describe small ellipses about their true places.

4. Show that the aberration of a star in latitude is

$$-20''45 \sin l \sin (S - l')$$

where l = latitude of star
l' = longitude of star
S = longitude of sun

5. Investigate a method for determining the parallax of a star in declination, taking the spheroidal figure of the earth into account.

6. How is the co-efficient of refraction determined by observation of a circumpolar star.

7. Find the time of the year when the twilight is shortest at a given place.

8. Given the altitude of a star when it is on the prime meridian, find the latitude of the place.

9. How is it shown that the copiousness of the emission of light from a luminous surface is proportional to the sine of the angle of emanation from the surface.

10. Define *power* of a lens, and show that the power of a combination of lenses in contact is equal to the sum of the powers of the several lenses.

11. A ray is propagated through a medium of variable density which is symmetrical with respect to the plane of the ray; taking this as planer of xy prove that the differential equation of the path is

$$\frac{\frac{d^2y}{dx^2}}{1+\left(\frac{dy}{dx}\right)^2} = \frac{1}{\mu}\left(\frac{d\mu}{dy} - \frac{d\mu}{dx}\frac{dy}{dx}\right).$$

12. Explain a method for measuring the refracting angle of a prism.

MATHEMATICAL SCHOLARSHIP.

ANALYTICAL GEOMETRY (*First Paper*).

Straight Line and Circle.

Examiner,.....THE REV. PRINCIPAL ADAMS, M.A.

1. Express the equation of a straight line in terms of the intercepts it cuts off from the axes.

Two sides of a triangle being taken as axes find the equation to the straight line cutting off the quarter of either side, and show that this straight line is parallel to the base.

2. Find the length of the perpendicular from any point on the straight line whose equation is $x \cos\alpha + y \cos\beta - p = o$.

Also the length of the perpendicular from the origin on $a(x-a) + b(y-b) = o$.

3. Find the area of the triangle formed by any three points and the condition that any three points may be in the same straight line.

4. $Ax + By + C = o$ is the equation to a straight line, and $aA + bB + cC = o$, where A, B, C are variable, and a, b, c constant; prove that

straight line in all its positions will pass through a fixed point, and find that point.

5. If $a = o$ and $\beta = o$ be the equations to two straight lines in abridged notation find what is represented by the equations $a^2 - \beta^2 = o$; $a \cos A - \beta \cos B = o$: $a \sin A - \beta \sin B = o$; $a^2 - K^2 \beta^2 = o$.

6. Given that the equation to the bisecting perpendicular of the side ($\gamma = o$) of a triangle is of the form $a \sin A - B \sin B + \gamma \sin (A - B) = O$, find the equation of the straight line joining the centres of the inscribed and circumscribing circles of the triangle.

7. Find the condition that $Ax^2 + Bxy + Cy^2 = o$ may represent two *real* straight lines; and prove that in any case the equation $rx^2 + sxy + ty^2 = o$, which represents the two bisectors of the angles contained by the first two straight lines, gives real straight lines.

8. Apply the property of No. 7 to the case of the asymptotes and axes of a conic.

9. Find the two conditions that the general equation in x and y of the second degree may represent a circle, (i) in rectangular, (ii) in oblique co-ordinates.

10. Given that $(x - x')(x - x'') + (y - y')(y - y'') = x^2 + y^2 - r^2$ is the equation to the chord of a circle passing through the points x' y' and x'' y'' deduce the equation to the tangent at any point of a circle, and in a similar way find the equation to a tangent at a point of the curve $xy = c^2$.

11. Find the equation to a pair of tangents drawn from an external point to a circle.

12. Find the equation of the chord joining the points of contact of two tangents drawn from an external point (h k) to the circles; and prove that as (h k) moves along a straight line the chord of contact moves about a fixed point in itself.

ANALYTICAL GEOMETRY (*Second Paper*).

Parabola, Ellipse, Hyperbola.

Examiner,..... THE REV. PRINCIPAL ADAMS, M.A.

1. If in the equation $ax^2 + 2hxy + by^2 2gx + 2fy + c = o$, a or $b = o$ what does the equation represent (*i*) when $h = o$, (*ii*) when h is not $= o$?

2. What is represented by the equation

$$\frac{x^2}{a^2} - \frac{2xy}{ab} + \frac{y^2}{b^2} - \frac{2x}{a} - \frac{2y}{b} + 1 = o?$$

3. Find the locus of the middle points of chords, parallel to a given line of a curve of the second degree.

4. From the result of the last question shew,

(*a*) That all diameters of a parabola are parallel to each other.

(*b*) That if diameter K of a conic bisect chords parallel to diameter L, diameter L will bisect chords parallel to diameter K.

5. Find the polar equation to the ellipse, the centre being the pole, and investigate the figure of the ellipse from its equation.

6. Find the form of the equation to a conic referred to the tangent and normal at any point as axes.

If through a given point on a conic any two lines at right angles to each other be drawn to meet the curve, the line joining their extremities will pass through a fixed point on the normal. Prove and generalize this theorem.

7. What is meant by the polar subtangent of a curve?

The focus being the pole, the locus of the extremity of the polar subtangent is the directrix.

8. Find the equation to the normal at the point $x'y'$ of a parabola.

Given the co-ordinates (hk) of a point from which a normal is drawn to the parabola, show how to find the ordinates of the points on the curve where the normal meets the curve: shew that there are in general three such points, and that the sum of their ordinates is zero.

9. Shew that the co-ordinates of every point (xy) on the ellipse satisfy the conditions $x = a \cos \phi$, $y = b \sin \phi$.

What is the geometrical meaning of ϕ.

If the equation to the tangent at any point of an ellipse be

$$\frac{x}{a} \cos \phi + \frac{y}{b} \sin \phi = 1$$

find the equation to the normal.

10. Two conics in general meet in four points. Prove this, and draw figures illustrating contact of the first, second and third order.

11. If $\phi(xy) = (ax + by^2) + 2gx + 2fy + c = o$ is the equation of a parabola, prove that the equation to its axis is

$$a \frac{d\phi}{dx} + b \frac{d\phi}{dy} = o.$$

12. If three conic sections have one chord common to all, their three other common chords will pass through the same point.

13. Enunciate and prove "Pascal's Theorem."

DIFFERENTIAL AND INTEGRAL CALCULUS.

EXAMINER,..... REV. PRINCIPAL ADAMS, M.A.

(1). Find the differential coefficients of the following functions with respect to x.

a^x first, where a is constant; secondly, where a is a function of x;

also of $\log(\tan \frac{x}{2})$ and of $\sin^{-1}\frac{x}{\sqrt{1+x^2}}$

(2). $A\ B$ are two points on the circumference of a circle, $A\ E$ is a diameter of the circle, $E\ B$ is drawn and produced to meet the tangent at A in the point D. If $A\ B$ is an infinitesimal of the first order, shew that $B\ D$ is one of the second order, $A\ D - A\ B$ of the third order; also shew how in the same figure to represent an infinitesimal of the fourth order.

(3) State Taylor's Theorem for the expansion of $f(x+h)$ giving the form of the remainder after the first n terms and deduce Maclaurin's Theorem.

(4) Find the value when $x = o$. } of. *(i)* $\operatorname{cosec}^2 \beta x \log(\cos a x)$ also of *(ii)* $\left(\frac{1}{x}\right)^{\tan x}$

(5) Prove $\frac{1}{x^x}$ is a maximum for the same value of x that makes $\frac{x}{\log x}$ a minimum, and find that value.

(6) Given that the subtangent of a curve with equation

$$y = \phi x \text{ is } \frac{y}{\frac{dy}{dx}} \text{ and that the subnormal is } y\frac{dy}{dx}$$

Find the length of the tangent (from any point to the axis of x) of the curve whose equation is $y = \frac{c}{2}\left(e^{\frac{x}{c}} + e^{\frac{-x}{c}}\right)$, the length of the normal being $\frac{y^2}{c}$.

(7) Find the radius of curvature in the ellipse

$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ where $x = a\cos\phi$, $y = b\sin\phi$.

having first proved that $\rho = \frac{(dx^2 + dy^2)^{\frac{3}{2}}}{dx\,d^2y - dy\,d^2x}$

(8) What is meant by "Integration by parts"? Give the general proof of the method, and apply it to shew that

$$\int x \log x \, dx = \frac{x^2}{2}(\log x - \tfrac{1}{2}).$$

(9). What is meant by a Definite Integral?

If $\phi x = \phi(a+x)$ prove that

$$\int_o^{na} \phi x \, dx = n \int_o^a \phi x \, dx.$$

(10). (*a*) If $y = f(x)$ be the equation to a curve, the origin being a point on the curve, and the axis of y a tangent at the origin, and if $\frac{dy}{dx} = \frac{1}{\tan \phi}$ shew how to obtain S, the length of arc, in terms of ϕ.

(*b*) If the curve be $y + c = \frac{c}{2}\left(e^{\frac{x}{c}} + e^{\frac{-x}{c}}\right)$ shew that $S = c \tan \phi$ where $\tan \phi = \frac{dy}{dx}$.

(11). Find by integration the area of the ellipse $= \pi ab$.

(12). If $y^2 = 4ax$ be the equation to a parabola which revolves round its axis, find the volume of the solid traced out by a portion of the parabola corresponding to a length h of the axis, and shew that this volume is half of a cylinder of the same height and base.

(13). The volume included between a right cone whose vertical angle is 60° and a sphere of given radius (r) touching it along a circle is $\frac{\pi r^3}{6}$.

(14). Integrate $\int \sin^4 x \, dx$ and $\int \sqrt{\frac{m+x}{x}} \, dx$ and shew that $\int_o^{2a} \sqrt{2ax - x^2} \cdot \text{vers}^{-1} \frac{x}{a} \cdot dx = \frac{\pi^2 a^2}{4}$.

HIGHER ALGEBRA, THEORY OF EQUATIONS, PLANE AND SPHERICAL TRIGONOMETRY.

Examiner,.....THE REV. PRINCIPAL ADAMS, M.A

1. If two rows (or two columns) of a determinant be identical the determinant vanishes. Prove this, and also prove that if the con-

stituents in one row or column differ only by a constant multiplier from those in another row or column the determinant vanishes.

Prove that $\begin{vmatrix} o & o & o & a & b & c \\ o & o & z & a & b & o \\ o & y & o & a & o & c \\ x & o & o & o & b & c \\ x & y & z & o & o & o \end{vmatrix} = o$

2. Shew that $\begin{vmatrix} (b+c)^2, & a^2, & a^2 \\ b^2, & (c+a)^2, & b^2 \\ c^2, & c^2, & (a+b)^2 \end{vmatrix} = 2\,a\,b\,c\,(a+b+c)^3.$

3. If $x-a$ is a factor of $f(x)$ then $f(a) = o$ and conversely:

Hence shew that $(a-d)\ (b-d)\ (c-d)$ is a factor of the determinant

$$\begin{vmatrix} 1, & 1, & 1, & 1 \\ a, & b, & c, & d \\ a^2, & b^2, & c^2, & d^2 \\ a^4, & b^4, & c^4, & d^4 \end{vmatrix}$$

4. Find (by Horner's Method) to two decimal places any one of the real roots of the equation

$$x^3 - 6\,x^2 + 9\,x - 3 = 0$$

5. If the roots of the equation $x^3 + p\,x^2 + q\,x + r = o$ be a, b, c, form the equation whose roots are

$$\frac{a}{b+c},\ \frac{b}{c+a},\ \frac{c}{a+b}.$$

Also write down the equation whose roots are the reciprocals of a, b, c, respectively.

6. If $f(x)$ be any function of x define its "derived function."

Prove that a real root of the derived function lies between every adjacent two of the real roots of the original function.

7. Solve the equation $x^3 + a\,x^2 + b\,x + c = o$

where the relation $3\,a\,c - b^2 = o$ holds.

8. Shew by an application of Sturm's Theorem that the equatione

$$2\,x^4 - 13\,x^2 + 10\,x - 49 = o$$

has two real roots and two imaginary roots also shew that one of the real roots is positive and the other negative.

9. From a given value of $\sin A$ shew that four values may in general be obtained for $\sin\frac{A}{2}$.

Shew which of the four will be used when $\frac{A}{2}$ lies between

$-45°$ and $-135°$.

10. In a triangle $A\ B\ C$, the parts a, b, A are given, find the conditions that two triangles may exist with the required parts, and prove that the sum of the areas of these two Triangles is $b^2 \sin A \cos A$.

11. Write down the exponential values of the sine and cosine, and expand x in powers of $\tan x$.

Shew that $\tan^{-1}\frac{1}{2} + \tan^{-1}\frac{1}{3} = \frac{\pi}{4}$ hence give a series for calculating π.

12. In a spherical triangle prove that

$$\frac{\sin A}{\sin a} = \frac{\sin B}{\sin b} = \frac{\sin C}{\sin c} = \frac{\sin(\text{half spherical excess})}{\sin\frac{a}{2}\cdot \sin\frac{b}{2}\cdot \sin\frac{c}{2}}.$$

What is the corresponding property in a plane triangle?

13. In an equilateral spherical triangle prove that $\sec A - \sec a = 1$.

14. Find the area of a spherical polygon of n sides.

Also prove that if S be number of solid angles in any polyhedron, F the number of faces, e the number of edges that $S + F = e + 2$.

15. If in a spherical triangle $C = A + B$, prove that the cord triangle is right-angled, the angular radius of the circumscribing small circle is $\frac{c}{2}$, and $\sin\frac{E}{2} = \tan\frac{a}{2}\tan\frac{b}{2}$; where E is the spherical excess?

SCIENCE SCHOLARSHIPS.

BOTANY.

Examiner,.....D. P. Penhallow, B. Sc.

1. Explain the composition of the Albumen of seeds and its physiological importance.

2. Explain the morphological nature of ovules and petals. Examples.

3. Root-hairs; their occurrence, structure and function.

4. Tendrils; their morphological nature, form and functions.

5. State the laws of phyllotaxis, and show how they may be applied to both leaves and flowers.

6. Explain the application of the terms protogyny and protandry. Example.

7. Explain the principal means of effecting cross-fertilisation.

8. Explain the origin and development of the embryo.

9. Explain the relation which the annual rings of exogens bear to growth and age.

10. Buds; their component parts and relation to other organs.

BOTANY.

Examiner, ...D. P. PENHALLOW, B. Sc.

1. Explain the principles upon which the natural system of classification is based.

2. Show what natural affinities exist between the higher Cryptogams and the lower Phenogams through their reproductive process.

3. State the distinctive characteristics of the three groups, Pteridophyta, Bryophyta, Thallophyta.

4. Give the following families, according to their affinities, and place them in relative order of development: Leguminosæ, Ranunculaceæ, Rosaceæ, Magnoliaceæ, Saxifragaceæ.

5. Give the leading characteristics of the Polygonaceæ, their distribution and economic value.

6. Give the principal characteristics of *Helianthus annus;* the name and distribution of the family to which it belongs.

7. Describe the Coniferæ, their distribution and economic value.

8. Salicaceæ; characteristics of the family, distribution and economic value.

9. Describe the changes in the flora, and indicate the predominant types or families of plants in passing from the southern border of Canada to the Arctic Circle.

10. Describe the influence of latitude and altitude upon the growth and distribution of plants.

Examination of plants Friday, September 18th, 9 to 12 a.m.

CHEMISTRY.

Examiner, ...B. J. HARRINGTON, B.A., Ph.D.

1. What are the chemical properties of Iodine? What the best test for its detection?

2. If the atomic weight of Phosphorus be 31 and the density of the vapour 62, what inference may be drawn with regard to the Phosphorus molecule?

3. Point out the significance of the terms oxidation and reduction when used in the broadest sense.

4. Give equations to represent the changes which take place (*a*) when Copper and Sulphuric Acid are heated together, and (*b*) when a solution of Caustic Potash is added to one of Copper Sulphate.

5. Distinguish between rational and empirical formulæ, giving examples.

6. How are the Hydrates of Sodium and Potassium prepared? What are their properties and principal uses?

7. Give briefly the properties of the metals Magnesium, Aluminium and Platinum.

8. Give the general formula of the Phenyl series. What is the first member of the series, and what its properties?

9. Describe the manufacture of Vinegar from Alcohol, representing the chemical changes by means of equations.

10. Give the formulæ of the following substances:—Nitre, Wood Spirit, Oxalic Acid, Oil of Turpentine, Calomel, Gypsum.

LOGIC.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Define (*a*) Term, (*b*) Proposition, (*c*) Syllogism.

2. Distinguish (*a*) Singular and Common, (*b*) Concrete and Abstract, (*c*) Positive and Negative, Terms, giving an example of each.

3. Explain the relation between the Extension and the Intension of Terms.

4. Analyse the following propositions:
(*a*) Metals are all good conductors of heat.
(*b*) Not many of the metals are brittle.
(*c*) Every mistake is not a proof of ignorance.
(*d*) Not one of the Greeks at Thermopylæ escaped.

5. Give the sign for the quantity and quality of each of these propositions.

6. Convert each of these propositions, or give all the opposites of any two.

7. Analyse the following syllogism into its terms and propositions:—"Birds are not quadrupeds, but mammals are; and, therefore, birds are not mammals."

8. Name the mood and figure of this syllogism, and reduce it to the first figure.

9. Point out the flaw in each of the following syllogisms:—

(*a*) If the medicine he took be effective, his health must be improved. But his health is improved, and therefore, the medicine he took is effective.

(*b*) Every wise man is a lover of virtue, and every true Christian is also a lover of virtue; so that every true Christian is a wise man.

(*c*) Whites are civilized; but as the Hindoes are not Whites, they are not civilized.

10. Distinguish the two main divisions of the Fallacies.

11. Give an example of a fallacy coming under each division.

12. Explain one of the Methods of Induction, illustrating by an example.

FIRST YEAR'S EXHIBITIONS.

GREEK.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. Translate; Homer, Iliad, Bk. IV.:—

(*a*) vss. 7–19; and (*b*) vss. 446–456.

2. (*a*) Give the etymology of the epithet Ἀλαλκομενηίς. (*b*) *ταί*,—what part of speech? (*c*) *καὶ αὐτοῦ κῆρας ἀμύνει*,—construe the Genitive. (*d*) *δρεσφι*,—Show the formation of this word, and to what case it is equivalent. (*e*) Give the derivation of *μισγάγκειαν*.

3. Give as carefully as you can the derivation and meaning of the following words:—*ἀνούτατος, χαμαί, γλαυκῶπις, πολύκλητοι, νωλεμέως, ἐλατῆρι, ζωστῆρι, λυκηγενέι, ἀγκυλομήτης, παραβλήδην*.

4. Parse the following verbs, giving their principal parts:—*οὐτα, οὐτησε, ὄρσ', ἔθορ', ἤιξεν, ἐηκ-, ἥσο, ἕψεται, δηώσωσιν, ἕλωσι, ἔσαν, ἄλτο*.

(*a*) Give the name and scale of the metre of the above extt. (*b*) Scan, carefully marking off the feet and quantities, the first five vss. of ext. (*a*) and note any metrical peculiarities. (*c*) What was the Digamma, and by what letters is it represented in Latin and English?

6. Translate, Xenophon, Anabasis, Bk. V. chap. viii., §§ 1–7, inclusive.

7. (*a*) Explain the various uses of the Genitive in § 1 of the above ext. (*b*) *διδόντων*, —what is the subject and object of this? (*c*) Parse *ὑποσχεῖν, ὠφλε, κατημέλει, ἐπλήγη*. (*d*) § 3,—*παρόν*,—what case, and why?

8. Translate and explain the construction of the following:—(*a*) *ὅτι ταχίστα*. (*b*) *ναναρχῶν δὲ καὶ τυγχάνει*. (*c*) Ἔδοξε *καὶ ταῦτα*. (*d*) *δίκην δεδώκασιν*. (Mention any similar phrase in Latin to this and to the one following.) (*e*) Ἄλλος *ἄλλον εἵλκε*. (*f*) Ἀνέκραγον *ὡς οὐ δέοι ὁδοιπορεῖν*.— (of what idiom is this last an illustration?) (*g*) *οὐ πολλοῦ δέοντας ἴσους τὸ μῆκος καὶ τό πλάτος εἶναι*.

9. Explain the geographical references in, (1) Τραπεζοῦντα, (2) Θύριος, (3) *τῷ* Εὐξείνῳ *πόντῳ*, (what other name, ancient and modern, has it?) (4) Χάλυβας, (5) Καρδοχους.

10. Translate :—Demosthenes, against Aphobus, Oration I. :—

Δῆλον μὲν τοίνυν καὶ ἐκ τούτων ἐστὶ τὸ πλῆθος τῆς οὐσίας. πεντεκαίδεκα γὰρ ταλάντων τρία τάλαντα τίμημα· ταύτην ἠξίουν εἰσφέρειν τὴν εἰςφοράν. ἔτι δ' ἀκριβέστερον εἰσεσθε, τὴν οὐσίαν αὐτὴν ἀκούσαντες. ὁ γὰρ πατήρ, ὦ ἄνδρες δικασταί, κατέλιπε δύο ἐργαστήρια, τέχνης οὐ μικρᾶς ἑκάτερον, μαχαιροποιοὺς μὲν τριάκοντα καὶ δύο ἢ τρεῖς, ἀνὰ πέντε μνᾶς καὶ ἕξ, τοὺς δ' οὐκ ἐλάττονος ἢ τριῶν μνῶν ἀξίους, ἀφ' ὧν τριάκοντα μνᾶς ἀτελεῖς ἐλάμβανε τοῦ ἐνιαυτοῦ τὴν πρόςοδον, κλινοποιοὺς δ' εἴκοσι τὸν ἀριθμόν, τετταράκοντα μνῶν ὑποκειμένους, οἷ δώδεκα μνᾶς ἀτελεῖς αὐτῷ προςέφερον· ἀργυρίου δ' εἰς τάλαντον ἐπὶ δραχμῇ δεδανεισμένου, οὗ τόκος ἐγίγνετο τοῦ ἐνιαυτοῦ ἑκάστου πλεῖον ἢ ἑπτὰ μναῖ. καὶ ταῦτα μὲν ἐνεργὰ κατέλιπεν, ὡς καὶ αὐτοὶ οὗτοι ὁμολογήσουσιν· ὧν γίγνεται τοῦ μὲν ἀρχαίου κεφάλαιον τέτταρα τάλαντα καὶ πεντακισχίλιαι, τὸ δ' ἔργον αὐτῶν πεντήκοντα μναῖ τοῦ ἐνιαυτοῦ ἑκάστου. χωρὶς δὲ τούτων, ἐλέφαντα μὲν καὶ σίδηρον, ὃν κατειργάζοντο, καὶ ξύλα κλίνεια εἰς ὀγδοήκοντα μνῶν ἄξια, κηκίδα δὲ καὶ χαλκὸν ἑβδομήκοντα μνῶν ἐωνημένα. ἔτι δ' οἰκίαν τριςχιλίων, ἔπιπλα δὲ καὶ ἐκπώματα καὶ χρυσία καὶ ἱμάτια καὶ κόσμον τῆς μητρὸς, ἄξια συμπαντα ταῦτα εἰς μυρίας δραχμάς, ἀργυρίου δ' ἔνδον ὀγδοήκοντα μνᾶς.

11. Express in Sterling or Canadian currency the value of the τάλαντον, δραχμή, μνά, aud ὀβελός, severally.

12. When and in what place did Demosthenes live? Mention important events in his public and private life.

LATIN.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate, Virgil, Æneid Bk. I :—vss. 267-290.

2. (*a*) Write down the name and scale of the metre of the above extract. (*b*) Scan the last five verses, carefully marking the feet and quantities.

3. Comment on the grammatical construction of the following :—(1) Dum *conderet* urbem. (2) Tot *adire* labores *impulerit*. (3) Mene *desistere*. (4) *Alto* prospiciens. (5) Parce *metu* Cytherea. (6) *Cui* nunc cognomen *Iulo* additur. (7) *Volvendis mensibus* * * *imperio* explebit. (8) *Fati* nescia Dido.

4. Write short explanatory notes on :—(1)Spoliis Orientis onustum. (2) Troianus Cæsar. (3) Gentem togatam. (4) Mavortia moenia. (5) Fontem Timavi. (6) Cyclopia saxa.

5. Translate, Livy, Bk. IX., chap. xvii., down to *modum venerat*.

6. (*a*) What seems to be the object of this digression concerning Alexander the Great? (*b*) Construe *quibus saepe tacitis cogitationibus volutavit animum.* (*c*) Write short accounts of any two of the Roman commanders enumerated in the above ext.

7. Translate, Cicero, Cato Major :—A rebus gerendis senectus abstrahit. Quibus? An iis quæ juventute geruntur et viribus? Nullaene igitur res sunt seniles quae vel infirmis corporibus animo tamen *administrentur?* Nihil ergo agebat Q. Maximus. Nihil L. Paullus, pater tuus, Scipio, socer optimi viri, filii mei. Ceteri senes, Fabricii, Curii, Coruncanii, quum rem publicam consilio et auctoritate defendebant, nihil agebant. Ad Appii Claudii senectutem accedebat etiam ut caecus *esset;* tamen is, quum sententia Senatus *inclinaret* ad pacem cum Pyrrho foedusque faciendum, nondubitavit dicere illa quae versibus persecutus est Ennius:

Quo vobis mentes, rectae quae stare solebant
Antehac, dementes sese flexere viai?

ceteraque gravissime: notum enim vobis carmen est; et tamen ipsius Appii extat oratio. Atque haec ille egit septem et decem annis post alterum consulatum quum inter duos consulatus anni decem *interfuissent* censorque ante superiorem consulatum fuisset: ex quo intelligitur Pyrrhi bello grandem sane fuisse: et tamen sic a patribus accepimus. Nihil igitur afferunt qui in re gerenda versari senectutem negant; similesque sunt ut si qui gubernatorem in navigando nihil agere *dicant,* quum alii malos scandant, alii per foros cursent, alii sentinam exhauriant, ille autem clavum tenens quietus sedeat in puppi. Non facit ea quae juvenes.

8. Explain the uses of the Subjunctive in the words printed in italics in the above extract.

9. Parse the following verbs, giving their principal parts :—Vixisset, vicisset, meminerunt, glorianti, missurus fuerit, quaererem, egressurus foret, sublatus, premet, fixit, fusi, repostum.

9. Write down the *Nom. Sing.* and *Plu.* of :—Aequore, aere; carcere, foedere, compagibus, morsu, viris (*both*), lustris, oris (*both*), aenis.

11. Give the derivation and meaning of:—deinde, veluti, quia, olim, ni, fragor, seditio, secundo, lustris, vinclis, rupes, saxa, scopuli. (Distinguish between the meanings of the last three.)

GRAMMAR AND COMPOSITION.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. (*a*) Distinguish between *inflected* and *noninflected* words. (*b*) Define the terms *Root, Stem, Prefix, Suffix, Case.*

2. Write down the three characters that represent consonantal combinations in the Greek alphabet, and name the consonants that can end words.

3. (*a*) Decline the following nouns and adjectives:—*κάλλος, καλὸς, πολίτης, ὄρνις, ἐλέφας.* (*b*) Give instances of adjectives of one, two and three terminations. Write down the Comparative and Superlative of:—*σοφός, ἡδύς, κοῦφος, πολύς.* (*c*) Give the *Genitive Singular* of the following pronouns :—*ἐγώ, αὐτός, οὗτος, τίς,* and *ὅστις.*

4. (*a*) Name the *principal* and *historical* Tenses. (*b*) What is meant by *pure, mute* and *liquid* Verbs in Greek? (*c*) Conjugate the Present and Imperfect Indicative Active of *καλέω* ; the Optative and Subjunctive Aorist Active of the same; and likewise the Aorist and Future Passive and Middle of *δουλεύω.* (*d*) Distinguish between *ἀποφηναι, ἀποφῆναι,* and *ἀποφήναι.*

5. Translate into Greek :—(1) He admires and praises the good man. (2) The men of the city said this. (3) Cyrus sent for the ships that he might land the heavy armed troops. (4) Both the father and his daughter are good. (6) The Persians were fighting a great battle, but they were conquered by the Greeks.

6. (*a*) What nouns of the third Declension in Latin have the *Gen. Plu.* in—*ium?* (*b*) Decline the following nouns :—*anima, judex, calcar, apis, domus, respublica.* (*c*) Give the rule for the gender of *dies.*

7. (*a*) How many classes of Adjectives are there in Latin? (*b*) Decline *tener, celer, gravis, par, felix.* (*c*) Compare *acer, gracilis, levis, malevolus, senex.*

8. Distinguish between *hic, ille, iste,* and *is : īdem* and *ĭdem ; hic* and *hicce ; quis, quae, quid,* and *qui, quae, quod.* With what pronouns is *cum* an enclitic?

9. (*a*) Write down the principal parts of—*cupio, cumbo, tundo, cædo.* (*b*) Inflect the Pres Subj. Pass. of *cado ;* the Perf. Subj. Act of *posco;* and the Imp. Subj. of *morior.*

10. Translate into Latin :—

(A) (*a*) It is the duty of all men to obey the laws and to be mindful of the benefits they receive from the commonwealth. (*b*) Brutus pretended to be mad in order the more easily to deceive his enemies, and to serve his country. (*c*) He said that he had slept a good sleep, but had dreamed a very strange dream. (*d*) He was a man of a good disposition, and one whom no man excelled in valour and love to his country. (*e*) He was born at Rome, educated at Athens, married a wife at Corinth, and died at Carthage. (*f*) Herodotus relates that

Thales of Miletus predicted to the Ionians an eclipse of the sun, and that it took place at the appointed time. (*g*) It is of great importance to the state that bad men should not make the laws. (*h*) I fear that he is going to conceal these things from his parents, and that they will not find them out.

(B) Then the Senate and people were in great fear, but Rome was saved that day by the courage of one man. As the enemy were on the point of crossing the bridge over the Tiber, Horatius Cocles, stood firm and kept them back while the Romans who had fled were busy destroying the bridge. As the crash of the last beam was heard Horatius leapt into the river, and in spite of all the darts of the enemy got safely over to the opposite bank.

GEOMETRY.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. Construct a rectangle equal to a given regular pentagon.

2. Find a square equal to the difference of two given squares.

3. If a right line be divided into any two parts, the sum of the squares of the whole line and one of the parts is equal to twice the rectangle contained by the whole and that part, together with the square of the other part.

a. The sum of the squares of any two lines exceeds the square of their difference by twice the rectangle under them.

4. On the same straight line, and on the same side of it, there cannot be two similar segments of circles which do not coincide.

5. Describe a regular pentagon about a given circle.

Extra Questions.

6. Equal parallelograms which have an angle in each equal, have the sides about the equal angles reciprocally proportional.

7. Find a fourth proportional to three given lines.

ALGEBRA AND ARITHMETIC.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. Sum the following series to n terms :—

$$1 - 2 + 4 - 8 + \&c.$$

2. Insert two Harmonic Means between 6 and 24.

3. Find the 6th term, and the sum of 6 terms, of the series $\frac{2}{3}$, $\frac{7}{15}$ $\frac{4}{15}$, &c.

4. Solve the equations.

(1). $\frac{n\,x+b}{\sqrt{x}} = \frac{n\,a+b}{\sqrt{a}}$;

(2). $\frac{6\,y-4\,x}{3\,z-7} = \frac{5\,z-x}{2y-3z} = \frac{y-2\,z}{3y-2\,x} = 1$;

(3). $a+x+\sqrt{a^2+b\,x+x^2} = b$

(4). $\frac{6\,x+13}{15} - \frac{3\,x+5}{5\,x-25} = \frac{2\,x}{5}$

5. Find a fraction such that if 1 be added to its numerator, it becomes $\frac{1}{3}$; but if 1 be added to its denominator, it becomes $\frac{1}{4}$.

6. Multiply $x+\frac{p}{2}+\sqrt{q+\frac{p^2}{4}}$ by $x+\frac{p}{2}-\sqrt{q+\frac{p^2}{4}}$

7. Find the greatest common measure of

$$a^4-x^4 \text{ and } a^3-a^2\,x-a\,x^2+x^3.$$

8. In any quadratic equation prove that when the co-efficient of x^2 is unity, the co-efficient of x with its sign changed is equal to the sum of the roots.

9. Find a fourth proportional to $3\frac{1}{3}$, ·03 and ·001.

10. Extract the square root of .003481.

11. If $\frac{22}{7}$ be the ratio of the circumference of a circle to its diameter, find how many miles the moon would travel in an hour, if in four weeks it travelled round the earth in a circle whose radius was 240,000 miles.

12. Find the interest of $1257.36 at $4\frac{1}{2}$ per cent. for five months.

ENGLISH GRAMMAR.

Examiner,..... CHAS. E. MOYSE, B.A.

1. Define an abstract noun. Show how abstract nouns are derived from other parts of speech.

2. How is *it* used in English? What words formerly did duty for *its*?

3. Give the pronominal adverbs of place.

4. Take six common English prepositions and state the primary and the more important secondary meanings of each.

5. (*a*) Give the feminine of *earl*, *sire*, *drake*, and the masculine of *nun maid*, *witch*. Tell what you know about the etymology of the words of your answer.

(*b*) How do you explain the formation of *vixen*, and what do you know about the suffix-*ster*.

6. Decline the Personal and Demonstrative Pronouns. Make historical notes when you can.

7. What are the primary meanings of *shall* and *will?* Show how they are used as auxiliaries.

8. (*a*) At what periods did a Latin element find its way into English? Give words from each period.

(*b*) The words of Classical are more numerous than those of Saxon origin. Why is English not a classical language?

9. Explain the forms *methinks, durst, ought, to wit, own.*

10. Correct or justify, giving in each case the rule that is in question:

(*a*) One of the best books that has ever been written.

(*b*) Nobody ever put so much of themselves into their work.

(*c*) Friendships which we once hoped and believed would never have grown cold.

(*d*) Nepos answered him, Celsus replied, and neither of them were sparing of censures on each other.

(*e*) I am one of those who cannot describe what I do not see.

11. Analyse:

(*a*) This news was brought to Edinburgh,
Where Scotland's King did reign,
That brave Earl Douglas suddenly,
Was with an arrow slain.

(*b*) Of him that hoped to be forgiven it is indispensably required that he forgive. On this great duty eternity is suspended; and to him that refuses to practise it, the throne of mercy is inaccessible, and the Saviour of the world has been born in vain.

(SECOND YEAR.)

Answer questions 2, 3, 5, 6, 8, 9, 10, 11, of the previous set and also the following:—

13. When is the Subjunctive used in English?

14. Show that the English alphabet is both defective and redundant, and classify its consonants.

15. Point out some of the influences of the Celts and Danes on our vocabulary.

16. Define Barbarism and Solecism.

17. What do the following suffixes signify, dom, ing, ery, oon, et, ble, ly, ize?

ENGLISH LITERATURE.

Shakespeare,:—Coriolanus.

Examiner,.....CHAS. E. MOYSE, B.A.

When did Coriolanus live, and where is the scene of Shakespere's play laid?

2. Give a list of the characters mentioned by name, and say who each is.

3. Act I. (*a*) What do you recollect of the "pretty tale" that Menenius-Agrippa tells?

(*b*) Give the meaning of words in italics, and add any notes that seem appropriate; *cranks* (of man); the one side must have *bale; quarry; comfortable;* how he *mammocked* it; some *debile* wretch; *embarquements.*

4. Act II. Who gives an account of the career of Coriolanus? Notice the chief points he mentions.

(*b*) Give the meaning of: the map of my microcosm; bisson conspectuities; the most sovereign prescription in Galen is but empirictic; nervy arm; the kitchen malkin; seld-shown flamens.

5. Give an outline of the last Act of the play.

6. Point out and comment on grammatical peculiarities in the following: (*a*) And feebling such as stand not in their liking; (*b*) The rabble should have first unroofed the city Ere so prevail'd with me; (*c*) Will the time serve to tell? I do not think; (*d*) That's worthily As any ear can hear; (*e*) What each of them by the other lose; (*f*) They were an-hungry; (*g*) One aim which was To take in many towns ere almost Rome Should know we were afoot; (*h*) Shall's to the Capitol? (*i*) Him I accuse,By this,the city ports hath entered; (*j*) My arm'd knees Who bowed but in my stirrup; (*k*) (he) godded me; (*l*) You were used To say; (*m*) We should by this, to all our lamentations, If he had gone forth consul, found it so; (*n*) He did it to please his mother, and to be partly proud.

6. Write an essay (not less than one page) on one of the following subjects: The play Coriolanus; A winter scene in the country.

SECOND YEAR'S EXHIBITIONS.

GREEK.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—

Homer, Iliad, Bk. XXII.—(*a*) vss. 21–37, and (*b*) vss. 344–354.

2. Give the Greek title of this book and a resumé of its contents, stating its prominent features in respect of style and treatment.

In ext. (*a*) (1) distinguish between the readings ὃς θέησι and ὃς θέησι. (2) Construe πεδίοιο and ἐπίκλησιν, and parse ἀστράσι. (3) πυρετόν,—what is to be noted in the use of this? In ext. (*b*)—(1) Construe γούνων μηδε τοκήων. (2) ἀπαλάλκοι,—account for the mood of this verb. (3) In vs. 59, τὸν δύστηνον,—what use of the article?

4. Derive and explain the meaning of :—*μαινάδι, ἄμβροτον, ἀμολγῷ, Σκαίαων, ἐτέρηφι, σχέτλιος, ἐνναλίῳ, ἄλαστε.*

5. Parse carefully, giving their principal parts :—*τέτναθι, ἴσαν, ἐγεγώνει, χειῇ, ἐρέουσι, τέτατο, ἔολπα, στέωμεν, ἔοργας, ἐξῆπτεν.*

6. Translate, Xenophon, Hellenics, Bk. I.—

(A) *Οἱ δὲ ἐν οἴκῳ Ἀθηναῖοι, ἐπειδὴ ἠγγέλθη ἡ ναυμαχία, χαλεπῶς εἶχον τῷ Ἀλκιβιάδῃ, οἰόμενοι δι' ἀμέλειάν τε καὶ ἀκράτειαν ἀπολωλεκέναι τὰς ναῦς, καὶ στρατηγοὺς εἵλοντο ἄλλους δέκα, Κόνωνα, Διομέδοντα, Λέοντα, Περικλέα, Ἐρασινίδην, Ἀριστοκράτην, Ἀρχέστρατον, Πρωτόμαχον, Θράσυλλον, Ἀριστογένην. Ἀλκιβιάδης, μὲν οὖν πονήρως καὶ ἐν τῇ στρατιᾷ φερόμενος, λαβὼν τριήρη μίαν ἀπέπλευσεν εἰς Χερρόνησον εἰς τὰ ἑαυτοῦ τείχη. μετὰ δὲ ταῦτα Κόνων ἐκ τῆς Ἄνδρου σὺν αἷς εἶχε ναυσὶν εἴκοσι ψηφισαμένων Ἀθηναίων εἰς Σαμον ἐπλευσεν ἐπὶ τὸ ναυτικόν. ἀντὶ δὲ Κόνωνος εἰς Ἄνδρον ἐπεμψαν Φανοσθένην, τέτταρας ναῦς ἔχοντα.*

(B) *Αἱ τῶν Λακεδαιμονίων ἀντιτεταγμέναι ἦσαν ἅπασαι ἐπὶ μιᾶς ὡς πρὸς διέκπλουν καὶ περίπλουν παρεσκευασμέναι, διὰ τὸ βέλτιον πλεῖν. εἶχε δὲ τὸ δεξιὸν κέρας Καλλικρατίδας. Ἕρμων δὲ Μεγαρεὺς ὁ τῷ Καλλικρατίδᾳ κυβερνῶν εἶπε πρὸς αὐτὸν ὅτι εἴη καλῶς ἔχον ἀποπλεῦσαι. αἱ γὰρ τριήρεις τῶν Ἀθηναίων πολλῷ πλείονες ἦσαν. Καλλικρατίδας δὲ εἶπεν ὅτι ἡ Σπάρτη οὐδὲν μὴ κάκιον οἰκεῖται αὐτοῦ ἀποθανόντος, φεύγειν δὲ αἰσχρον ἔφη εἶναι. μετὰ δὲ ταῦτα ἐναυμάχησαν χρόνου πολύν, πρῶτον μὲν ἀθρόαι, ἔπειτα δὲ διεσκεδασμέναι. ἐπεὶ δὲ Καλλισρατίδας τε ἐμβαλούσης τῆς νεὼς ἀποπέσων εἰς τὴν θάλατταν ἠφανίσθη Πρωτόμαχός τε καὶ οἱ μετ' αὐτοῦ τῷ δεξιῷ τὸ εὐώνυμον ἐνίκησαν, ἐντεῦθεν φυγὴ τῶν Πελοποννησίων ἐγένετο εἰς Χίον, πλείστων δὴ καὶ εἰς Φώκαιαν· οἱ δὲ Ἀθηναῖοι πάλιν πάλιν εἰς τὰς Ἀργινούσας κατέπλευσαν.*

7. (*a*) Name those of the ten generals mentioned in ext. (A) that were afterwards put to death; and state what was the real nature of the offence for which they were tried and condemned. (*b*) *Οἰόμενοι δι' ἀμέλειαν κ. τ. λ.* :—Write a short note on the general character and conduct of Alcibiades, showing what grounds may have existed to justify the imputation here made. (*c*) *ἀμέλειάν τε καὶ ἀκράτειαν* :—Give the etymology of these words, and turn them into Latin. (*d*) *τὰ ἑαυτοῦ τείχη*:—Give the name from Cor. Nepos.

8. Ext. (B)—(*a*) *επὶ μιᾶς* :—Give the import of *ἐπὶ*, and supply the ellipsis with *μιᾶς*. (*b*) *πρὸς διέκπλουν καὶ περίπλουν* :—explain these manœuvres. (*c*) *αἱ γὰρ τριήρεις * * * ἦσαν.*—What do you note in the use of the verb ?

9. (*a*) Give the geographical position of Methymna, Mitylene, Rhodes, Thurii, Gytheum, Phocis, Phocæa, Malea. (*b*) At what

period of the Peloponnesian War does the narrative of the Hellenics begin, and of whose history is it a continuation?

10. Translate, Herodotus, Bk. III.—Chap. xxxvi.

11. (*a*) Characterise the dialect used by Herodotus, and show its relation to that of Homer, and also to the Attic. (*b*) Give the Attic equivalents of :—*τεν, ἰρέα, βαλέειν, ξεινήην, δεκόμενος, θῶυμα, πόλις, τωὐτό, πλεῦνες, ὄτεῳ.*

12. State as accurately as you can the import of the particles :—*δή, δὴ καί, καὶ δὴ καί, ἦ γάρ, ἀλλὰ γάρ, ῥά, κέν.*

LATIN.

Examiner,..... .....Rev. George Cornish, LL.D.

1. Translate :—Virgil, Æneid, Bk. VI., vss. 724-747.

2. (*a*) What writers had Virgil probably before his mind when he wrote the above passage? (*b*) Comment on the following :—(1) Titania astra. (2) Spiritus, mens. (3) Marmareo sub æquore. (4) Dispiciunt, despiciunt, respiciunt;—distinguish between these readings. (5) Supremo lumine. (6) Quisque suos patimur manes.

3. Discuss the grammatical construction and interpretation of the following extracts :—(*a*) *Præpetibus pennis* ausus se credere *cœlo*. (*b*) Non indebita posco regna *meis fatis*. (*c*) Sed *terræ* graviora (pericula) manent. (*d*) Gaudet *cognomine terra* (alii, *terræ*). (*e*) Et pater ipse suo *superum* (al. *superûm*) jam signat honore.

4. Translate, Horace, Odes Bk. III., ode xxix., vss. 29-64.

5. (*a*) *Tyrrhena regum progenies* :—Explain this, and write a sketch of the life of Maecenas, naming the poets and literary men whom he was intimate with. (*b*) Write down the name and scheme of the measure of the above ode, and scan vss. 29-32.

6. Explain carefully the government of the following in ode xxix :—vs. 1, tibi. 5, morae. 24, ventis. 27, Cyro. 29, temporis. 41, sui, and name the case of each.

7. Translate :—Livy, Bk. XXII., Chap. 11.

8. (*a*) Explain the use of the subjunctive, severally, in the following :—*censerent, scriberet, nuntiaret*. (*b*) Show the construction of :—*Quibus legionibus, victori hosti, iis scriptis, Tibur, diem, dicto, ejus imperii*. (*c*) Comment on the following forms used by Livy :—*Exercitu, Ostia, duellis, faxit*. (*d*) *Bina* castra :—Why not *duo*? (*e*) Explain the meaning of :—Principes, tanesignani, triarii.

9. Translate :—Cicero, Select Letters.

Nos ad Pindenissum, quod oppidum munitissimum Eleutherocilicum omnium memoria in armis fuit. Feri homines et acres et omnibus rebus ad defendendum parati. Cinximus vallo et fossa, aggere maximo, vineis turre altissima, magna tormentorum copia, multis sagittariis, magno labore apparatu; multis sauciis nostris, incolumi exercitu, negotium confecimus. Hilara sane Saturnalia, militibus quoque, quibus equis exceptis reliquam praedam concessimus. Mancipia venibant Saturnalibus tertiis. Cum haec scribebam, in tribunali res erat ad HS. cxx. Hinc exercitum in hiberna agri male pacati deducendum Q. fratri dabam; ipse me Laodiceam recipiebam. Haec adhuc. Sed ad praeterita revertamur. Quod me maxime hortaris et quod pluris est quam omnia, in quo laboras, ut etiam Ligurino *μώμῳ* satis faciamus, moriar, si quicquam fieri potest elegantius; nec iam ego hanc continentiam appello, quae virtus voluptati resistere videtur: ego in vita mea nulla umquam voluptate tanta sum adfectus, quanta adficior hac integritate, nec me tam fama, quae summa est, quam res ipsa delectat. Quid quaeris? fuit tanti; me ipse non noram nec satis sciebam, quid in hoc genere facere possem; recte *πεφυσίωμαι*: nihil est praeclarius. Interim haec *λαμπρά*: Ariobarzanes opera mea vivit, regnat; *ἐν παρόδῳ* consilio et auctoritate et quod insidiatoribus eius *ἀπρόσιτον* me, non modo *ἀδωροδόκητον* praebui, regem regnumque servavi.

10. (*a*) Name the date, place and occasion of the letter from which this ext. is taken. (*b*) (1) Saturnalibus tertiis :—describe, and give the date. (2) HS. cxx.—Expand and explain this formula, and state the value, in sterling money, of the sum named. (*c*) Express in Latin the Greek words here used. (*d*) Point out the value of Cicero's Letters.

HISTORY AND GRAMMAR.

Examiner,..... Rev. George Cornish, LL.D.

(A) 1. Describe the form of government prevalent in the Grecian States during the Heroic Age. State what causes operated to bring about changes in the form of government, and trace the progress of the change from the earliest form to the constitution of Athens under Cleisthenes.

2. The supremacy of Athens:—its character, and the causes and events that led to its establishment and overthrow.

3. Describe the policy of the Persian monarchy towards the contending states in the Peloponnesian war.

4. At what period, and after what wars, was Rome mistress of Italy?

5. Enumerate the foreign possessions of Rome at the close of the period of the Republic.

(B) 1. (*a*) Contract the following vowel-combinations (Attic)—*a*—ε, *a*—η, ε—*a*, ο—η, *a*—ει, *a*—η, ε—αι, *a*—ου. (*b*) Resolve the following forms of *Crasis* :—κἀν, κἂν, χὠ, χᾠ, ἄν, οὐπί.

2. (*a*) Write in Attic Greek the equivalents of these Homeric form :—πόδεσσιν, κούρῃσι, γαίης. εὐνῇφι, σέθεν, ἄμμες, ἔθεν, τεός. (*b*) Contract and accentuate the following verbs :—φιλέει, κάλεε, ἐκάλεε, ἐπολέμοον, τολμάειν. (*c*) Give the full forms of ζῆν, χρῆσθαι and διψῴη.

3. Distinguish between :—βασίλεια and βασιλεία. κλως and καλῶς. ἀγων and ἀγών, οἷος, οἷος, and οἷός τε, αὐτοῦ and αὑτοῦ, πρᾶξις and πρᾶγμα πόλις and πόλισμα. (*b*) What are *verbals* ? Show how they are formed and construed, illustrating with διώκω.

4. Give examples, with definitions, of verbs, *frequentative*, *desiderative*, and *inceptive*, in Latin.

5. Illustrate by examples the use of the *Ablative Absolute;* the *Predicative Dative;* the *Accusative of extension;* the *Objective* and *Subjective Genitive;* and of the *Dativus Ethicus.*

6. What cases follow ἀκούω, χρομαι, ἡγέομαι, ἥδομαι, *egeo*, *parco*, *misereor*, *credo* ?

(C) 1. Translate into Latin, with different constructions, "when his work was over he returned home to supper." (*b*) Correct the following sentences :—(*a*) Urbs non parcenda est. (*b*) Mendax haud creditur. (*c*) Missus est viam explorare. (*d*) Quid me fiet parvum facio.

2. Translate into Greek :—(1) Socrates, the philosopher of Athens, said many wise things, but his enemies persecuted him to death. (2) One who admires Solon will not admire the wise men of the present day. (3) The Athenians tarried there many days, and ravaged the whole country, and did much harm to the people. (4) The soldiers marched out of the city and advanced a hundred stadia into the enemy's country.

3. Translate in Latin : - As soon as day arose Leonidas perceived that he had been betrayed, and was surrounded by the enemy. Nevertheless, with the same undaunted courage, he took all the necessary measures, and prepared for the fate which he had long resolved to meet. After praising and thanking the allies for the bravery with which they had behaved, he sent them all away to their respectives countries; many of the Spartans, too, he would have dismissed under various pretences, but they all to a man refused to leave their King. All day, therefore, he remained quiet in his camp, but when evening approached he bade his men prepare. About midnight, therefore, this devoted body of men marched out, with Leonidas at their head. They soon broke into the Persian camp and put to flight all

who dared oppose them. It is impossible to describe the terror and confusion which ensued among so many thousands. Still the Greeks marched on, overturning the tents, slaying the guards, and driving that vast army like sheep, before them. At length they came even to the imperial tent of Xerxes, and had he not quitted it at the first alarm, he would there have ended his life and expedition. The Greeks in an instant put all the guards to flight, and trampled under foot the costly furniture.

MATHEMATICS (Ordinary).

Examiner,.....Alexander Johnson, LL.D.

1. Similar rectilineal figures are in the same ratio as the squares described on their homologous sides.

2. If a line parallel to the base of a triangle be cut by a line drawn from the vertex to the base, its segments are in the same ratio as the segments of the base.

3. Inscribe in a given circle a triangle equiangular to a given one.

4. Construct a square equal to a given regular hexagon.

5. In a plane triangle prove $\sin \frac{1}{2} A = \sqrt{\frac{(s-b)(s-c)}{b\,c}}$.

6. Prove $\sin A + \sin B = 2 \sin \frac{1}{2}(A+B) \cos \frac{1}{2}(A-B)$.

$$\cos A = 2 \cos^2 \tfrac{1}{2} A - 1.$$

7. State the rules for the solution of right-angled triangles.

8. Calculate $\sin 1''$.

9. Solve the equations:—

$$\frac{1+x+\sqrt{2x+x^2}}{1-x+\sqrt{2x+x^2}} = 1 - a\,x :$$

$$\left.\begin{array}{c} x+y+z=0 \\ (a+b)\,x+(a+c)\,y+(b+c)\,z=0 \\ a\,b\,x+a\,c\,y+b\,c\,z=1 \end{array}\right\}.$$

10. Find a number such that, whether it is divided into *two* or *three* equal parts, the continued product of the parts shall be the same.

11. A looking-glass 12 by 18 inches has a frame of uniform width, and of the same area as the glass; find the width of the frame.

12. Simplify, $5\sqrt{3} \times 7\sqrt{\tfrac{8}{3}} \times \sqrt{2}$.

GEOMETRY.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. If the lines Aa, Bb, Cc, be let fall from the angular points A, B, C, of a triangle upon the opposite sides, prove that the intersections of BC and bc, of CA and ca, and of AB and ab will be on the radical axis of the circles circumscribing the triangles ABC and abc.

2. If a point move along a fixed straight line its polar always passes through a fixed point.

3. Given three circles; taken two at a time they form three pairs of circles; prove that the lines joining the centre of each circle to the internal centre of similitude of the other two meet in a point.

4. If on the three diagonals of a complete quadrilateral, as diameters, circles be described, they shall have the same radical axis, and cut orthogonally the circle circumscribing the triangle formed by the three diagonals.

5. The anharmonic ratio of four points on a circle is the same as the ratio of the rectangles under the opposite sides of the quadrilateral formed by joining the four points.

6. Two vertices of a triangle move on fixed straight lines and the three sides pass through three fixed points which lie on a straight line; find the locus of the third vertex.

7. Given two unequal straight lines; find the arithmetic, geometric and harmonic means between them, and prove that the geometric mean is a mean proportional between the other two means.

8. Given the base, vertical angle and sum or difference of sides, construct the triangle.

9. In a given circle inscribe a triangle, having its base parallel to a given line and its two sides passing through two given points, not both situated on a line parallel to the given line.

10. Given a straight line and two points on the same side of it; find a point in the given line at which the two given points shall subtend a *maximum* angle.

11. The diagonals of a quadrilateral inscribed in a circle are as the sums of the rectangles under the pairs of sides terminated in each diagonal.

12. Given the base and vertical angle of a triangle, find the locus of the intersection of its perpendiculars.

THEORY OF EQUATIONS, ALGEBRA.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. State and prove Sturm's Theorem.

2. Apply it to determine the situation of the real roots in the equation

$$x^4 - 4x^3 + x^2 + 6x + 2 = 0,$$

where $f_2(x) = 5x^2 - 10x - 7$, $f_3(x) = x - 1$, $f_4(x) = +$

3. Apply Horner's method to find the root lying between 2 and 3 of

$$x^4 - 5x^3 + 3x^2 + 35x - 70 = 0.$$

4. Solve the equation $x^3 - 9x - 28 = o$.

5. Solve the equation $x^4 + 3x^3 - 7x^2 - 27x - 18 = 0$ which has two roots of the form $a, -a$.

6. Explain Newton's method of approximation to the numerical value of a root of an equation.

7. Define reciprocal equations, distinguish them into two classes, and show that one of an even degree with its last term positive can be reduced to one of half its degree.

8. If the co-efficients of an equation are whole numbers, and the co-efficients of the first term unity, the equation cannot have a fractional root.

9. Find the number of combinations that can be formed out of the letters of the word "Notation," taken three together.

10. Find the middle term of the expansion of

$$(1 + x)^{2n}.$$

11. If $y^3 - 3y + x = 0$ find the value of y in a series of ascendding powers of x.

12. Prove the Binominal Theorem for a fractional index.

ENGLISH LITERATURE:—*Shakespeare and Trench.*

Examiner,.....CHAS. E. MOYSE, B.A.

1. What is the source of As You Like It? Show that Shakespeare has not followed his original.

2. What "spectacle" did Jacques moralize, and in what way?

3. Give an outline of the Scene in the Forest, where a table is set out, from the point when Orlando suddenly enters, to the end.

4. How does Rosalind upbraid Phebe?

5. Describe the rescue of Oliver by Orlando, and its consequences.

6. Notice and explain peculiarities of meaning or of construction in the following extracts: the which; a many merry men; Three *proper* young men; come your ways; I can tell who should down; *still* mine enemy; the duke is *humorous*; Because that I am more than common tall; the *roynish* clown; I die for food; (the) unexpressive The; A more sounder instance; moe of my verses; God 'ild you for your last company; The common executioner.....falls not the axe; I have since I was three year old, *conversed* with a magician—(account for "year"); my daughter's favour; Address'd a mighty power; we assay'd to steal.

7. Explain the following allusions:—

(*a*) God make incision in thee!

(*b*) Since Pythagoras' time, that I was an Irish rat.

(*c*) I answer you right painted cloth.

(*d*) Dead Shepherd, now I find thy saw of might,
"Who ever loved that loved not at first sight?"

(*e*) Troilus had his brains dashed out with a Grecian club.

8. What is the regular form of Shakespeare's blank verse? Scan:—

(*a*) *Ros.*—I would I were at home.
Cel.— We'll lead you thither.

(*b*) We'll have a swashing and a martial outside.

(*c*) The flux of company; anon a careless herd.

(*d*) In bitterness. The common executioner.

(*e*) Than in their countenance. Will you hear the letter?

9. Show that men's names have been seized on, if they are capable of honourable interpretation.

10. Show that these words have deteriorated,—resent, retaliate, animosity. From an examination of our vocabulary show that the Normans were the ruling race.

11. Comment on the words church, pagan, frank, legend, Semitic, majolica, rhubarb.

12. What does Trench remark about comprehensive words? Can you illustrate from him?

13. How do synonyms arise? Take two or three groups or pairs of words that appear synonymous, and distinguish between them.

FRENCH.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Translate into English :—

Le Cochet, le Chat, et le Souriceau.

Un souriceau tout (*a*) jeune, et qui n'avait rien vu (*b*),
Fut presque pris (*c*) au dépourvu.
Voici comme il conta (*d*) l'aventure à sa mère :
" J'avais franchi les monts qui bornent cet Etat,
Et trottais comme un petit rat
Qui cherche à se donner carrière,
Lorsque deux animaux m'ont arrêté les yeux :
L'un doux, bénin et gracieux (*e*),
Et l'autre turbulent, et plein d'inquiétude ;
Il a la voix perçante et rude,
Sur la tête un morceau de chair,
Une sorte de bras dont il s'élève en l'air
Comme pour prendre sa volée,
La queue en panache étalée."
Or, c'était un cochet dont notre souriceau
Fit à sa mère un tableau
Comme un animal venu d'Amérique

LA FONTAINE, *Livre VI. Fable V.*

2. *a* To what parts of speech does *tout* belong? What is it here? Why?

b, *c* Write the second person plural of all the simple tenses of those verbs.

d What difference is there between *conta* and *compta?*

e Write the feminine of all the adjectives of this and the following line. Mention those which form the feminine regularly, those by special rules and those irregularly.

3. Write correctly the past particles in the following sentences and give the rules: Les deux maisons que j'ai *acheté* m'ont *coûté* bien cher. Je les ai *vu* battre leurs ennemis.

4. Traduisez en anglais: Tiens, Scapin, je ne me souvenais pas que je viens justement de recevoir cette somme en or, et je ne croyais pas qu'elle dût m'être si tôt ravie. Tiens va-t-en racheter mon fils.

5. Put the 4th question in the plural

6. Translate into French:

Yes, sir, it is true that three weeks ago you sent me to take, in the evening, a little watch to the little Gipsy whom you love. I came back home, my clothes all covered with mud, my face all bloody, and I told you that I had met robbers who had beaten me, and had stolen the watch. It was I, sir, who had kept it.—It is you who has kept the watch ?—Yes, sir, to know what time it is.—Ah! Ah! I hear pretty things, and I have a very faithful servant.

SESSIONAL EXAMINATIONS,

1886.

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CLASSICS.

FIRST YEAR.

GREEK.—HOMER.—ODYSSEY, BOOKS XXI. XXII.

Examiner,.....J. M. MULGAN, M. A.

1. Translate :—

(A) Εὐρύμαχον δὲ μάλιστα καὶ Ἀντίνοον θεοειδέα
λίσσομ', ἐπεὶ καὶ τοῦτο ἔπος κατὰ μοῖραν ἔειπεν,
νῦν μὲν παῦσαι τόξον, ἐπιτρέψαι δὲ θεοῖσιν·
ἠῶθεν δὲ θεὸς δώσει κράτος, ᾧ κ' ἐθέλῃσι.
ἀλλ' ἄγε μοι δότε τόξον ἐΰξοον, ὄφρα μεθ' ὑμῖν
χειρῶν καὶ σθένεος πειρήσομαι, ἤ μοι ἐτ' ἐστὶν
ἷς, οἵη πάρος ἔσκεν ἐνὶ γναμπτοῖσι μέλεσσιν,
ἠ ἤδη μοι ὄλεσσεν ἀλη τ' ἀκομιστίη τε.

(B) Ἦ δειλὲ ξείνων, ἦ τοι φρένες οὐδ' ἠβαιαί·
οὐκ ἀγαπᾷς, ὃ ἔκηλος ὑπερφιάλοισι μεθ' ἡμῖν
δαίνυσαι; οὐδέ τι δαιτὸς ἀμέρδεαι, αὐτὰρ ἀκούεις
μύθων ἡμετέρων καὶ ῥήσιος;

(C) ἀτὰρ ἄμμες ὄπισθεν ἀρεσσάμενοι κατὰ δῆμον
ὅσσα τοι ἐκπέποται καὶ ἐδήδοται ἐν μεγάροισιν,
τιμὴν ἀμφὶς ἄγοντες ἐεικοσάβοιον ἕκαστος,
χαλκόν τε χρυσόν τ' ἀποδώσομεν. εἰςόκε σὸν κῆρ
ἰανθῇ· πρὶν δ' οὔ τι νεμεσσητὸν κεχολωσθαι.

(D) Ἴσκεν ἕκαστος ἀνὴρ, ἐπεὶ ἦ φάσαν οὐκ ἐθέλοντα
ἄνδρα κατακτεῖναι· τὸ δὲ νήπιοι οὐκ ἐνόησαν,
ὡς δή σφ ἐν καὶ πᾶσιν ὀλέθρου πείρατ' ἐφῆπτο.

(E) κεῖτο δ' ὑπ' αἰθούσῃ ὅπλον νεὸς ἀμφιελίσσης
βύβλινον, ᾧ ῥ' ἐπέδησε θύρας, ἐς δ' ἧῖεν αὐτός·
ἕζετ' ἔπειτ' ἐπὶ δίφρου ἰών, ἐνθεν περ ἀνέστη,
εἰςορόων Ὀδυσῆα. ὁ δ' ἤδη τόξον ἐνώμα,
πάντῃ ἀναστρωφῶν, πειρώμενος ἔνθα καὶ ἔνθα,
μὴ κέρα ἶπες ἔδοιεν, ἀποιχομένοιο ἄνακτος.
ὧδε δέ τις εἶπεσκεν, ἰδὼν ἐς πλησίον ἄλλον.
Ἦ τις θηητὴρ καὶ ἐπίκλοπος ἔπλετο τόξων.
ἦ ῥά νύ που τοιαῦτα καὶ αὐτῷ οἴκοθι κεῖται,
ἢ ὄγ' ἐφορμᾶται ποιησέμεν· ὡς ἐνὶ χερσὶν
νωμᾷ ἔνθα καὶ ἔνθα κακῶν ἔμπαιος ἀλήτης.

2. Translate (*a*) *αἴ γὰρ δὴ τοσσοῦτον ὀνήσιος ἀντιάσειεν ὡς οὗτός ποτε τοῦτο δυνήσεται ἐνανύσασθαι.* Mention the various ways of expressing a wish in Greek (*a*) referring to the future (*b*) referring to the past.

(*b*) *ἀλλ' ἄρα μιν φθῆ Τηλέμαχος κατόπισθε βαλὼν χαλκήρεϊ δουρι ὠωων μεσσηγὺς, διὰ δὲ στήθεσφιν ἔλασσε.*

(*c*) *ὀυ τι γάμου τόσσον κεχρημένος οὐδὲ χατίζων ἀλλ' ἄλλα φρονέων, τὰ οἱ οὐκ ἐτέλεσσε Κρονίων.* Give in Greek or in English the two constructions which are here combined.

(*d*) *ἀλλὰ τοῦτο ὀδύρομαι εἰ δὴ τοσσόνδε βίης ἐπιδευέες εἰμὲν ἀντιθέαν Οὐσῆος.*

(*e*) *δείξω οὐλὴν τὴν τοτέ με σὺς ἤλασε λευκῷ ὀδόντι Παρνησόνδ' ἐλθόντα σὺν υἱάσιν Αὐτολύκοιο.*

3. (*a*) Explain the cases of the following words in question 2. *ὀνήσιος* (*a*). *βίης* and *Ὀδυσῆος* (*d*). *τήν* and *με* (*e*).

(*b*) Give the various meaning of *χράω* in the active and middle.

(*c*) What is the precise meaning of *ἐπαρξάσθω* in the phrase *ἐπαρξάσθω δεπάεσσιν.*

4. Go through the Imperfect Indicative Active of *τίθημι* and *εἶμι*(ibo) and give the first aorist second person singular of *λύω* in all the moods Active and Middle.

5. Explain, without translation, the moods in the following :—

(i) *ἀλλὰ συ δῖ' Ἐυμαιε φέρων ἀνὰ δώματα τόξον ἐν χείρεκσιν ἐμοὶ θέμεναι.*

(ii) *τίς δέ κε τόξα τιταίνοιτ' ;*

(iii) *ἐπὶ δ' αὐτῷ πάντες ἔχωμεν*

(iv) *περὶ γὰρ δίε μή τις Ἀχαιῶν.....ἐλάσειε.*

6. Parse the following and give the Attic form wherever it differs from that of Homer :—*μέθιεν, εἴσομαι φείδεο, ἤπατι ἄλτο, ἠφι, εὐκλείας, εἰπησι μέμβλετο βλημένου.*

7. (*a*) Give the future, aorists, and perfects used to form the Attic active voice of the following verbs :— *δείδω, τρέπω, πνέω, ἔννυμι, ἅπτω, καλέω, φθάνω.* (*b*) Decline *αἰπύς, χείρ, ἀνήρ, νημέρτης.*

8. Give the meaning of the following, and mention words in Greek or other languages in which the root or roots of their component parts are found :—*γήθησεν, προπρηνής, ἵστον, κήρ,* (doom), *εἵματα, ὑπόδρα, χανδὸν, ἵπες, δίς, αὐλός.*

9. Give the letter changes which result in such forms as *ἤμβροτον βλώσκω* and *μέμβλετο.*

10. Scan any six lines in question 1. What is meant by a Spondaic line ?

INTERMEDIATE EXAMINATION.

GREEK.—ISOCRATES.—THE PANEGYRICUS.

Examiners, ... { Rev. George Weir, LL.D.
J. M. Mulgan, M.A.

1. Translate :—

(A) Χωρὶς δὲ τούτων, ἣν ἅπαντα ταῦτ' ἐάσαντες ἀπὸ τῆς ἀρχῆς σκοπῶμεν, εὑρήσομεν, ὅτι τὸν βίον οἱ πρῶτοι φανέντες ἐπὶ γῆς οὐκ εὐθὺς οὕτως ὥσπερ νῦν ἔχοντα κατέλαβον, ἀλλὰ κατὰ μικρὸν αὐτοὶ συνεπορίσαντο. τίνας οὖν χρὴ μᾶλλον νομίζειν ἢ δωρεὰν παρὰ τῶν θεῶν λαβεῖν ἢ ζητοῦντας αὐτοὺς ἐντυχεῖν; οὐ τοὺς ὑπὸ πάντων ὁμολογουμένους καὶ πρώτους γενομένους καὶ πρός τε τὰς τέχνας εὐφυεστάτους ὄντας καὶ πρὸς τὰ τῶν θεῶν εὐσεβέστατα διακειμένους;

(B) Τὴν τοίνυν ἄλλην διοίκησιν οὕτω φιλοξένως κατεσκευάσατο καὶ πρὸς ἅπαντας οἰκείως ὥστε καὶ τοῖς χρημάτων δεομένοις καὶ τοῖς ἀπολαῦσαι τῶν ὑπαρχόντων ἐπιθυμοῦσιν ἀμφοτέροις ἁρμόττειν καὶ μήτε τοῖς εὐδαιμονοῦσι μήτε τοῖς δυστυχοῦσιν ἐν ταῖς αὐτῶν ἀχρήστως ἔχειν ἀλλ' ἑκατέροις αὐτῶν εἶναι παρ' ἡμῖν, τοῖς μὲν ἡδίστας διατριβὰς, τοῖς δ' ἀσφαλεστάτην καταφυγήν.

(C) Ἀεὶ μὲν οὖν οἵ θ' ἡμέτεροι πρόγονοι καὶ Λακεδαιμόνιοι φιλοτίμως πρὸς ἀλλήλους εἶχον, οὐ μὴν ἀλλὰ περὶ καλλίστων ἐν ἐκείνοις τοῖς χρόνοις ἐφιλονίκησαν, οὐκ ἐχθροὺς ἀλλ' ἀνταγωνιστὰς σφᾶς αὐτοὺς εἶναι νομίζοντες, οὐδ' ἐπὶ δουλείᾳ τῇ τῶν Ἑλλήνων τὸν βάρβαρον θεραπεύοντες ἀλλὰ περὶ μὲν τῆς κοινῆς σωτηρίας ὁμονοοῦντες, ὁπότεροι δὲ ταύτης αἴτιοι γενήσονται, περὶ τούτου ποιούμενοι τὴν ἁμιλλαν. ἐπεδείξαντο δὲ τὰς αὑτῶν ἀρετὰς πρῶτον μὲν ἐν τοῖς ὑπὸ Δαρείου πεμφθεῖσιν.

2. Translate the following passages and give a very brief account of the historical allusions which they contain :—

(1) Τοιαυταις διανοίαις χρώμενοι καὶ τοὺς νεωτέρους ἐν τοῖς τοιούτοις ἤθεσι παιδεύοντες οὕτως ἀνδρας ἀγαθοὺς ἀπέδειξαν τοὺς πολεμήσαντας πρὸς τοὺς ἐκ τῆς Ἀσίας ὥστε μηδένα πώποτε δυνηθῆναι περὶ αὐτῶν μήτε τῶν ποιητῶν μήτε τῶν σοφιστῶν ἀξίως τῶν ἐκείνοις πεπραγμένων εἰπεῖν.

(2) τὴν μέν γε Μαντινέων πόλιν εἰρήνης ἤδη γεγενημένης ἀνάστατον ἐποίησαν, καὶ τὴν Θηβαίων Καδμείαν κατέλαβον, καὶ νῦν Ὀλυνθίους καὶ Φλιασίους πολιορκοῦσιν.

(3) Ἑκατόμνως δ' ὁ Καρίας ἐπίσταθμος τῇ μὲν ἀληθείᾳ πολὺν ἤδη χρόνον ἀφέστηκεν, ὁμολογήσει δ' ὅταν ἡμεῖς βουληθῶμεν. ἀπὸ δὲ Κνίδου μέχρι Σινώπης Ἕλληνες τὴν Ἀσίαν παροικοῦσιν, οὓς οὐ δεῖ πείθειν ἀλλὰ μὴ κωλύειν πολεμεῖν.

(4) ἐν γὰρ τοῖς τοιούτοις καιροῖς πολλάκις μικραὶ δυνάμεις μεγάλας ῥοπὰς ἐποίησαν, ἐπεὶ καὶ περὶ Χίων ἔχοιμ' ἂν τοῦτον τὸν λόγον εἰπεῖν, ὡς ὁποτέροις ἐκεῖνοι προσθέσθαι βουληθεῖεν, οὗτοι κατὰ θάλατταν κρείττους ἦσαν.

3. (*a*) State the different uses of the Participle in Greek.

(*b*) Translate the following extracts, and explain the force of the Participle in each.—

(1) *τῶν μὲν γὰρ ἀθλη-ῶν δὶς τοσαύτην ῥώμην λαβόντων οὐδὲν ἂν πλέον γένοιτο τοῖς ἄλλοις.*

(2) *ἥκω συμβουλεύσων.*

(3) *καὶ μὴ περιορᾶν τοὺς ἐν τοῖς πολέμοις ἀποθνήσκοντας ἀτάφους γιγνομένους.*

(4) *ὥσπερ ἐν ἀλλοτρίαις ψυχαῖς μέλλοντες κινδυνεύειν.*

(5) *ἅπαντα γὰρ τὸν χρόνον διετέλεσαν κοινὴν τὴν πόλιν παρέχοντες.*

4. (*a*) Name the parts of a conditional sentence and state the chief forms or classes of such sentences in Greek. (*b*) In passing from the direct to the indirect question in Greek what changes of mood occur (1) after Primary (2) after Historic tenses?

5. (*a*) Explain, without translating, the obliqe cases in the following:—(i) *ἡμῶν κατηγορεῖν.* (ii) *ἄλλων διαφέρειν.* (iii) *ἐκεῖνον τῆς ὑβρέως ἐπαυσαν.* (iv) *ὃν οὐκ οὐκ ἀφετέον.* (v) *τῶν αὐτων ἔργων ἐκείνοις ἐπιθυμῶμεν.* (*b*) When is the accusative absolute as opposed to the genitive absolute permissible in Greek? (*c*) What is meant by attraction or assimilation of the relative? Give instances.

6. Give the component parts of the following words in such a way as to shew in each case how the word gets its meaning:—*ἀνταγωνιστής, εὐήθεια, ὁμονοοῦντες, ἀντίπαλος, κατηγορεῖν, τελετή, παρανομεῖν, ἐφιλονίκησαν, συλλήβδην, συνθήκη,*

7. Parse the following, giving the principal parts of the verbs:—*διατεθεῖεν, εἰσαγάγεσθαι, προεστῶτας, θάψαι, διαφθαρεῖεν, κρείττω, διενέγκοντες, δεδίεναι, παραναγνοίη, ἡρούμεθα, ἐπῆρε.*

8. With meanings are the following words used in this oration?—*ἀκριβής, λόγος, διαλλάσσω, ἔχω, ἀπαλλάσσω, ὑπερβολή, πολιτεία, αὐταρκής, ἀνάστατον.*

9. Translate the following prepositional phrases:—*ὅταν τὰ πράγματα διὰ μιᾶς γένηται γνώμης, ἐπὶ τῆς τούτων ἀρχῆς, ἐξ ὑπογυιου, ὡς, ἡμᾶς τὸ μὲν ἐπ' ἐκείνῳ, πανηγύρεις διὰ πολλοῦ χρόνου συλλεγεῖσαι.*

10. (*a*) State very briefly the origin of the term *Πανηγυρικός*, and the object of the oration of this name. (*b*) Give a brief summary (not more than a few words to each) of what Isocrates says on the following points:—(i) The debt of Greece to Athens in the mythical age. (ii) the conduct of Sparta towords the smaller Greek states during her supremacy. (iii) the history of Conon.

THIRD YEAR.

GREEK.—AESCHYLUS.—PROMETHEUS VINCTUS.

Examiner,.....Rev. George Cornish, LL.D.

1. Translate :—

(A) ΠΡ. *εἰ γάρ μ' ὑπὸ γῆν νέρθεν τ' Ἀΐδου*
τοῦ νεκρηδέγμονος εἰς ἀπέραντον
Τάρταρον ἥκεν,
δεσμοῖς ἀλύτοις ἀγρίοις πεγάσας,
ὡς μήτε θεὸς μήτε κις ἄλλος
τοῖσδ' ἐπεγήθει.
νῦν δ' αἰθέριον κινυγμ' ὁ τάλας
ἐχθροῖς ἐπίχαρτα πέπονθα.

ΧΟ. *τίς ὧδε τλησικάρδιος*
θεῶν, ὅτῳ τάδ' ἐπιχαρῆ ;
τίς οὐ ξυνασχαλᾷ κακοῖς
τεοῖσί, δίχα γε Διός ; ὁ δ' ἐπικότως ἀεὶ
θέμενος ἀγναμπτον νόον,
δάμναται οὐρανίαν
γένναν. οὐδὲ λήξει, πρὶν ἂν ἢ κορέσῃ κέαρ, ἢ παλάμᾳ τινὶ
τὰν δυσάλωτον ἕλῃ τις ἀρχάν.

ΠΡ. *ἦ μὴν ἔτ' ἐμοῦ, καίπερ κρατεραῖς*
ἐν γυιοπέδαις αἰκιζομένου,
χρείαν ἕξει μακάρων πρύτανις,
δεῖξαι τὸ νέον βούλευμ' ὑφ' ὅτου
σκῆπτρον τιμάς τ' ἀποσυλᾶται.
καί μ' οὔτι μελιγλώσσοις πειθοῦς
ἐπαοιδαῖσιν
θέλξει, στερεάς τ' οὔποτ' ἀπειλὰς
πτήξας τόδ' ἐγὼ καταμηνύσω,
πρὶν ἂν ἐξ ἀγρίων δεσμῶν χαλάσῃ,
ποινάς τε τίνειν
τῆσδ' αἰκίας ἐθελήσῃ.

(B) ΩΚ. *οὐκουν, Προμηθεῦ, τοῦτο γιγνώσκεις ὅτι*
ὀργῆς νοσούσης εἰσὶν ἰατροὶ λόγοι ;

ΠΡ. *ἐάν τις ἐν καιρῷ γε μαλθάσσῃ κέαρ*
καὶ μὴ σφριγῶντα θυμὸν ἰσχναίνῃ βίᾳ.

ΩΚ. *ἐν τῷ προμηθεῖσθαι δὲ καὶ τολμᾶν τίνα*
ὁρᾷς ἐνοῦσαν ζημίαν ; δίδασκέ με.

ΠΡ. *μόχθον περισσὸν κουφόνουν τ' εὐηθίαν.*

ΩΚ. *ἔα με τήνδε τὴν νόσον νοσεῖν, ἐπεὶ*
κέρδιστον εὖ φρονοῦντα μὴ δοκεῖν φρονεῖν.
ΠΡ. *ἐμὸν δοκήσει τἀμπλάκημ' εἶναι τόδε.*
ΩΚ. *σαφῶς μ' ἐς οἶκον σὸς λόγος στέλλει πάλιν.*
ΠΡ. *μὴ γάρ σε θρῆνος οὑμὸς εἰς ἔχθραν βάλῃ.*
ΩΚ. *ἦ τῷ νέον θακοῦντι παγκρατεῖς ἕδρας ;*
ΠΡ. *τούτου φυλάσσου μή ποτ' ἀχθεσθῇ κέαρ.*
ΩΚ. *ἡ σὴ, Προμηθεῦ, ξυμφορὰ διδάσκαλος.*
ΠΡ. *στέλλου, κομίζου, σῶζε τὸν παρόντα νοῦν.*
ΩΚ. *ὁρμωμένῳ μοι τόνδ' ἐθώϋξας λόγον.*
λευρὸν γὰρ οἶμον αἰθέρος ψαίρει πτεροῖς
τετρασκελὴς οἰωνός· ἀσμενος δέ τἂν
σαθμοῖς ἐν οἰκείοισι κάμψειεν γόνυ.

2. (*a*) Ext. (A).—(1) *ἦ μήν*,—explain the force of these particles. (2) *ὑφ' ὅτου*,—what gender? (3) *πρὶν ἄν*,—explain the constructions with *πρίν*. (4) *δεῖξαι*,—what is the subject of this? (5) *ἀποσυλᾶται*,—how is the Present here used? (*b*) Ext. (B) (1) *νοσούσης—ὀργῆς*,—what other readings for these are given? Whence the metaphor in these vss? (2) *ἐν τῷ προμηθεῖσθαι καὶ τολμᾶν*,—explain the omission of the Article before *τολμᾶν*. (3) *τὴν νόσον*,—construe and give the other reading. (4) *θρῆνος οὑμός*,—for what does the Pronoun stand? (5) *ἀχθεσθῇ κέαρ*,—construe.

3. Translate carefully the following extt., showing the grammatical construction :—

(*a*) *ἀσμένῳ δέ σοι*
ἡ ποικιλείμων νὺξ ἀποκρύψει φάος·
πάχνην θ' ἑῴαν ἥλιος σκεδᾷ πάλιν.

(*b*) *εἰ δ' ὧδε τραχεῖς καὶ τεθηγμένους λόγους*
ῥίψεις, τάχ' ἂν σου καὶ μακρὰν ἀνωτέρω
θακῶν κλύοι Ζεύς, ὥστε σοι τὸν νῦν ὄχλον
παρόντα μόχθων παιδιὰν εἶναι δοκεῖν.

(*c*) *αὐτὸν γάρ σε δεῖ Προμηθέως,*
ὅτῳ τρόπῳ τῆσδ' ἐκκυλισθήσει τέχνης—τύχης.

(*d*) *καὶ τοισίδ' οὐδεὶς ἀντέβαινε πλὴν ἐμοῦ.*
ἐγὼ δ' ἐτόλμησ'· ἐξελυσάμην βροτοὺς
τοῦ μὴ διαρραισθέντας εἰς Ἅιδου μολεῖν.

(*e*) *Ἥφαιστε, σοὶ δὲ χρὴ μέλειν ἐπιστολὰς*
ἃς σοι πατὴρ ἐφεῖτο.

4. Explain the uses of *ὅπως* and *ὡς* in the following extt. :—(*a*) *ὡς ἂν διδαχθῇ * * στέργειν.* (*b*) *ὡς μήτε θεὸς * * * ἐπεγήθει.* (*c*) *ὡς τὴν τυραννίδα ἐκπέρσων.* (*d*) *ὅπως μὴ σαυτὸν οἰκτιεῖς.* (*e*) *σεαυτὸν σῷζ' ὅπως ἐπίστασαι.* (*f*) What is the force of *ἂν* in ext. (*a*)?

5. Show the construction of the oblique cases in :—(*a*) αὐτὸν ἐξέπληξε τῶν ὑψηγόρων κομπασμάτων. (*b*) μάχας ἀτρεστοι. (*c*) φρενῶν ἐπηβόλους. (*d*) πολλῶν ὀνομάτων μορφὴ μία. (*e*) τῷ τοιαῖσδε πημοναῖσι κάμπτομαι. (*f*) πάντων μετασχὼν καὶ τετολμηκὼς ἐμοί.

6. Parse the following vebs :—πελῶ, βᾶσαι, ἀχθεσθῇ, σύθην, προσέπτα, ἐπιτεῖλαι, ἄραρεν (note quantity of penult), ἐπηύρου, σχεθεῖν, σκεδᾷ.

7. (*a*) Comment on the the forms σφέ, νίν, σφῷν, ὀθούνεκα. (*b*) Give the composition and meaning of :—νηλής, ἐπαχθῆ, ἀφεγγής, ποταίνιον, ἄϊστοῖ, ἀτέρμονον, πεδοί, παράορον, ποικιλείμων, μασχαλιστῆρας.

8. (*a*) Distinguish between :—νῦν and νίν, οὔκουν and οὐκοῦν, δίος and διός, ἦσαν and ἧσαν, ᾗ, ᾗ, ᾗ, and ᾖ, δεῖξαι and δείξαι. (*b*) Define *Crasis* and *Synezesis*, and form Crases of the following :—ὁ ἐξ, ὁ ἀνήρ, καὶ ἀν, καὶ εἶτα, τοὶ ἄν, καὶ οἱ, καὶ ἄν, καὶ ἐν.

9. Scan the first four vss. of extt (A) and (B), writing down in full the name and scheme of the metre of each.

10. (*a*) Name the *Dramatis Personae* of this play, and the other dramas of Aeschylus in which he used the legend of Prometheus. (*b*) How many actors were allowed on the stage at the same time ? What was the normal number of the Chorus ? (*c*) Give the approximate date of this Drama and name eminent contemporaries of Aeschylus in politics and literature.

B. A. ORDINARY EXAMINATION.

GREEK.—{ DEMOSTHENES.—THE OLYNTHIACS.
AESCHYLUS. PROMETHEUS VINCTUS.

Examiner,.....Rev. George Cornish, LL.D.

1. Translate :—

(A) Οὐ μὴν ἀλλ' ἐπιεικῶς, ὦ ἀνδρες Ἀθηναῖοι, τοῦτ', ὃ δυσμαχώτατόν ἐστι τῶν Φιλίππου πραγμάτων, καὶ βέλτιστον ὑμῖν. τὸ γὰρ εἶναι πάντων ἐκεῖνον ἕνα δντα κύριον καὶ ῥητῶν καὶ ἀπορρήτων, καὶ ἅμα στρατηγὸν καὶ δεσπότην καὶ ταμίαν, καὶ πανταχοῦ αὐτὸν παρεῖναι τῷ στρατεύματι, πρὸς μὲν τὸ τὰ τοῦ πολέμου ταχὺ καὶ κατὰ καιρὸν πράττεσθαι πολλῷ προέχει, πρὸς δὲ τὰς καταλλαγάς, ἃς ἂν ἐκεῖνος ποιήσαιτο ἄσμενος πρὸς Ὀλυνθίους, ἐναντίως ἐχειδῆλον γάρ ἐστι τοῖς Ὀλυνθίοις, ὅτι νῦν οὐ περὶ δόξης οὐδ' ὑπὲρ μέρους χώρας πὐλεμοῦσιν, ἀλλ' ἀναστάσεως καὶ ἀνδραποδισμοῦ τῆς πατρίδος, καὶ ἴσασιν ἃ τ' Ἀμφιπολιτῶν ἐποίησε τοὺς παραδόντας αὐτῷ τὴν πόλιν, καὶ Πυδναίων τοὺς ὑποδεξαμένους. καὶ ὅλως ἄπιστον, οἶμαι, ταῖς πολιτείαις ἡ τυραννίς, ἄλλως τε κἂν ὅμορον χώραν ἔχωσιν.

(B) Τί δὴ τὸ πάντων αἴτιον τούτων, καὶ τί δή ποτε ἅπαντ' εἶχε καλῶς τότε καὶ νῦν οὐκ ὀρθῶς ; ὅτι τὸ μὲν πρότερον στρατεύεσθαι τολμῶν αὐτὸς ὁ δῆμος δεσπότης τῶν πολιτευομένων ἦν καὶ κύριος αὐτὸς ἁπάντων τῶν ἀγαθῶν, καὶ ἀγαπητὸν ἦν παρὰ τοῦ δήμου τῶν ἄλλων ἑκάστῳ καὶ τιμῆς καὶ ἀγαθοῦ τινος μεταλαβεῖν. νῦν δὲ τοὐναντίον κύριοι μὲν οἱ πολιτευόμενοι τῶν ἀγαθῶν, καὶ διὰ τούτων ἅπαντα πράττεται, ὑμεῖς δ' ὁ δῆμος ἐκνενευρισμένοι καὶ περιῃρημένοι χρήματα καὶ συμμάχους ἐν ὑπηρέτου καὶ προσθήκης μέρει γεγένησθε, ἀγαπῶντες ἐὰν μεταδιδῶσι θεωρικῶν ὑμῖν ἡ Βοηδρόμια πέμψωσιν οὗτοι, καὶ τὸ πάντων ἀνδρειότατον, τῶν ὑμετέρων αὐτῶν χάριν προσοφείλετε. οἱ δ' ἐν αὐτῇ τῇ πόλει καθείρξαντες ὑμᾶς ἐπάγουσιν ἐπὶ ταῦτα καὶ τιθασεύουσι χειροήθεις ποιοῦντες. ἐστι δ' οὐδέποτ', οἶμαι, μέγα καὶ νεανικὸν φρόνημα λαβεῖν μικρὰ καὶ φαῦλα πράττοντας· ὁποῖ' ἄττα γὰρ ἂν τὰ ἐπιτηδεύματα τῶν ἀνθρώπων ᾖ, τοιοῦτον ἀνάγκη καὶ τὸ φρόνημα ἔχειν.

2. (Ext. A).—(*a*) οὐ μὴν ἀλλ' ἐπεικῶς· — Supply the ellipsis and explain the meaning and derivation of ἐπιεικῶς. (*b*) Analyse, and show the grammatical construction of τὸ γὰρ εἶναι * * * ἐναντίως ἔχει. (*c*) καὶ ἴσασιν ἃ * * τοὺς ὑποδεξαμένους·—Explain the historical references. (Ext. B).—For μεταδιδῶσι, βοηδρόμια and ἀνδρειότατον there are the variants μεταδῶσι, βοΐδια and ἀνανδρότατον·—State the meaning of these.

3. Give the exact import of the following metaphorical phrases used by Demosthenes :—καθείρξαντες, τιθασεύσουσι, χειροήθεις, ἐκνενευρισμένοι, βραβεύειν, προπέποται, ἀνεχαίτισε καὶ διέλυσιν, φωρᾶται καὶ καταρρεῖ.

4. Define the meaning of the following political terms :—εἰσφέροντας, κατὰ συμμορίας, λόγον διδόναι, νομοθέτας, τὰ θεωρικά, ψήφισμα.

5. Translate as accurately as you can the following extracts adding an explanatory grammatical note where you deem it proper :—

(*a*) ὡς ἅπας μὲν λόγος, ἂν ἅπῃ τὰ πράγματα, μάταιόν τι φαίνεται καὶ κενόν, μάλιστα δὲ ὁ παρὰ τῆς ἡμετέρας πόλεως. ὅσῳ γὰρ ἑτοιμότατ' αὐτῷ δοκοῦμεν χρῆσθαι, τοσούτῳ μᾶλλον ἀπιστοῦσι πάντες αὐτῷ. πολλὴν δὴ τὴν μετάστασιν καὶ μεγάλην δεικτέον τὴν μεταβολήν, εἰσφέροντας, ἐξιόντας, ἅπαντα ποιοῦντας ἑτοίμως, εἴπερ τις ὑμῖν προσέξει τὸν νοῦν.

(*b*) δέδοικα, ὦ ἄνδρες Ἀθηναῖοι, μὴ τὸν αὐτὸν τρόπον, ὥσπερ οἱ δανειζόμενοι ῥᾳδίως ἐπὶ τοῖς μεγάλοις τόκοις μικρὸν ὑπορήσαντες χρόνον ὕστερον καὶ τῶν ἀρχαίων ἀπέστησαν, οὕτω καὶ ἡμεῖς, ἐπὶ πολλῷ φανῶμεν ἐῤῥᾳθυμηκότες καὶ ἅπαντα πρὸς ἡδονὴν ζητοῦντες, πολλὰ καὶ χαλεπὰ ὧν οὐκ ἐβουλόμεθα ὕστερον εἰς ἀνάγκην ἔλθωμεν ποιεῖν, καὶ κινδυνεύσωμεν περὶ τῶν ἐν αὐτῇ τῇ χώρᾳ.

(*c*) πρὸς γάρ τὸ τελευταῖον ἑκβὰν ἕκαστον τῶν προϋπαρξάντων ὡς τὰ πολλὰ κρίνεται. διὸ καὶ σφόδρα δεῖ τῶν λοιπῶν ἡμᾶς, ὦ ἄνδρες Ἀθηναῖοι, φροντίσαι, ἵνα ταῦτ' ἐπανορθωσαμενοι τὴν ἐπὶ τοῖς πεπραγμένοις ἀδοξίαν ἀποτριψώμεθα.

5. Parse, pointing out the root of each :—ἐπανέντας, ἐσκεμμένος, ἐγνωκότας, πεφηνέναι, φήσαι, ἠὐξήθη, προῄρηται, κομεῖσθε, ἤρθη, συμπλακῇ,

ἠφίετε, ἠνώχλει. (Explain the formation of the last and cite other instances of similar formation.)

6. Comment on the dates and order of sequence of the Olynthiacs adopted by different editors.

7. Translate :—

(C) *ἐπώνυμον δὲ τῶν Διὸς γέννηματων*
τέξεις κελαινὸν Ἔπαφον· ὃς καρπώσεται
ὅσην πλατύρρους Νεῖλος ἀρδεύει χθόνα·
πέμπτῃ δ' ἀπ' αὐτοῦ γέννα πεντηκοντάπαις
πάλιν πρὸς Ἄργος οὐχ ἑκοῦσ' ἐλεύσεται
θηλύσπορος, φεύγουσα συγγενῆ γάμον
ἀνεψιῶν· οἱ δ' ἐπτοημένοι φρένας,
κίρκοι πελειῶν οὐ μακρὰν λελειμμένοι,
ἥξουσι θηρεύοντες οὐ θηρασίμους
γάμους, φθόνον δὲ σωμάτων ἕξει θεός·
Πελασγία δὲ δέξεται θηλυκτόνῳ
Ἄρει δαμέντων νυκτιφρουρήτῳ θράσει·
γυνὴ γὰρ ἄνδρ' ἕκαστον αἰῶνος στερεῖ,
δίθηκτον ἐν σφαγαῖσι βάψασα ξίφος.
τοιάδ' ἐπ' ἐχθροὺς τοὺς ἐμοὺς ἔλθοι Κύπρις.
μίαν δὲ παίδων ἵμερος θέλξει τὸ μὴ
κτεῖναι σύνευνον, ἀλλ' ἀπαμβλυνθήσεται
γνώμην· ὀνοῖν δὲ θάτερον βουλήσεται,
κλύειν ἀναλκις μᾶλλον ἢ μιαφόνος·
αὖτη κατ' Ἄργος βασιλικὸν τέξει γένος·
μακροῦ λόγου δεῖ ταῦτ' ἐπεξελθεῖν τορῶς.

(D) XO. *στένω σε τᾶς οὐλομένας τύχας, Προμηθεῦ.*
δακρυσίστακτον δ' ἀπ' ὀσσων ῥαδινῶν λειβομένα ῥέος παρειὰν
νοτίοις ἔτεγξα παγαῖς· ἀμέγαρτα γὰρ τάδε Ζεὺς
ἰδίοις νόμοις κρατύνων ὑπερήφανον θεοῖσι
τοῖσι πάρος δείκνυσιν αἰχμάν.
πρόπασα δ' ἤδη στονόεν λέλακε χώρα,
*μεγαλοσχήμονά τ' ἀρχαιοπρεπῆ * * * στένουσι τὰν σὰν*
ξυνομαιμόνων τε τιμάν, ὁπόσοι τ' ἔποικον ἄγνᾶς
Ἀσίας ἕδος νέμονται, μεγαλοστόνοισι σοῖσι
πῆμασι συγκάμνουσι θνητοί.
Κολχίδος τε γᾶς ἐνοικοι
παρθένοι, μάχας ἄτρεστοι
καὶ Σκύθης ὁμιλος, οἳ γᾶς
ἔσχατον τόπον ἀμφὶ Μαιῶτιν ἔχουσι λίμναν,
Ἀραβίας τ' ἄρειον ἄνθος,

ὑψίκρημνόν θ' οἱ πόλισμα
Κανκάσου πέλας νέμονται,
δάϊος στρατὸς, ὀξυπρῴροισι βρέμων ἐν αἰχμαῖς.

9. (*a*) Note and explain any varieties of reading or of punctuation that occur in extt. (C) and (D), and comment on the geographical references. (*b*) In ext. (C) Construe:—(1) *πελειῶν*. (2) *σωμάτων*. (3) *θελυκτόνῳ Ἄρει*. (4) *νυκτιφρουρήτῳ θράσει*. (5) *δαμέντων*. (6) *τὸ μὴ κτεῖναι*. (*c*) Write down Doric forms, with Attic equivalents in (D). Why these Doric forms in the Attic Drama?

10. Write explanatory notes on:—(1) *τύχαι Ἀτλαντος*. (2) *Τυφῶνα θοῦρον*. (3) *ἱπούμενος*. (4) *ἀχαρις χάρις*. (5) *ἐξωμμάτωσα*. (6) *ἐς τε Πυθὼ κἀπὶ Δωδωνης*. (7) *ἀκοιμήτῳ ῥεύματι*. (8) *Σκύθην οἶμον*. (9) *ναρ—θηκοπλήρωτον*. (10) *ἀπέδιλος*.

11. Parse the following:—*σχεθεῖν, ἄραρεν, μεθῶμεν, ἧσαν, ἀφῖξαι, προσῆξε, ἐπηυρον, ἐφεῖτο, παρεστώτων, σαφηνιῶ, λέλακε*.

12. (*a*) Give the approximate date of this Drama, adducing internal evidence. (*b*) Cite current proverbs and political references supposed to be in it. (*c*) Name the other Dramas which, with this, were composed by Æschylus on the legend of Prometheus. (*d*) With what school of philosophers was Æschylus said to be connected?

FIRST YEAR.

LATIN.—VIRGIL.—ÆNEID, BOOK VI.

Examiner,.....J. Mason Mulgan, M.A.

1. Translate:—

(A) Gnosius haec Rhadamanthus habet, durissima regna,
Castigatque auditque dolos, subigitque fateri,
Quae quis apud superos, furto laetatus inani,
Distulit in seram commissa piacula mortem.
Continuo sontes ultrix accincta flagello
Tisiphone quatit insultans, torvosque sinistra
Intentans angues vocat agmina saeva sororum.
Tum demum horrisono stridentes cardine sacræ
Panduntur portæ. Cernis custodia qualis
Vestibulo *sedeat?* Facies quae limina *servet?*
Quinquaginta atris immanis hiatibus Hydra
Sævior intus habet sedem.
(B) Continuo auditae voces vagitus et ingens

Infantumque animae flentes in limine primo,
* Quos dulcis vitae exsortes et ab ubere raptos
Abstulit atra dies et funere mersit acerbo.
Hos juxta falso damnati *crimine* mortis.
Nec vero hae sine sorte datae, sine iudice, sedes:
Quaesitor Minos urnam movet; ille silentum
Conciliumque vocat vitasque et crimina discit.
(C) Quam Troius heros
Ut primum juxta stetit adgnovitque per umbras
Obscuram, *qualem* primo qui surgere mense
Aut videt, aut vidisse putat per nubila Lunam,
Demisit lacrimas, dulcique adfatus *amore* est:
(D) Gnatique patrisque,
Alma, precor, miserere; potes namque omnia, nec te
Nequiquam lucis Hecate praefecit Avernis.
Si potuit Manes arcessere coniugis Orpheus,
Threicia fretus *cithara* fidibusque canoris,
Si Fratrem Pollux alterna morte redemit,
Itque reditque viam totiens—quid Thesea magnum,
* Quid *memorem* Alciden? Et mi genus ab Jove summo.
(E) * Paulatim adnabam terrae; iam tuta tenebam,
Ni gens crudelis madida cum veste gravatum
Prensantemque uncis manibus capita aspera montis
* Ferro invasisset, praedamque ignara putasset.
Nunc me fluctus habet, versantque in litore venti.

2. (*a*) Account for the construction of the words in Italics in the above extracts.

(*b*) Explain the allusions to Roman legal procedure contained in extract (B). (*c*) Fill up (in English or Latin) the ellipse contained in the conditional sentence of extract (C) and in extract (D). (*d*) What is peculiar in the use of dolos and piaculum in extract (*a*)?

3. Scan the lines marked with an asterisk in question 1. Mention some of the differences between the Virgilian and Homeric hexameter.

4. Translate the following extracts, with short explanations of peculiarities of meaning or construction:—

(*a*) Vidi et crudeles dantem Salmonea pœnas.
dum flammas Jovis et sonitus imitatur Olympi.
(*b*) Tum Tartarus ipse
bis patet in præceps tantum tenditque sub umbras quantus ad ætherium cœli suspectus Olympi.
(*c*) Nos flendo ducimus horas.
(*d*) Stat ferrea turris ad auras.
(*e*) Nec sacra morantur Jussa viri.
(*f*) Orantes primi transmittere cursum.
(*g*) En hæc promissa fides est.

5. Parse, giving the principal parts of the verbs, prǽstiterit, sineret, excisum, partus, inferiora, intexunt, velleris, excussa, ēgere, ĕgere, perosi, utere.

6. Give the meaning of the following words and instance other words in which their component parts appear: Brumalis, egregius, tæda, piaculum, uncus, gubernaculum, discrimen, caligo, sollemnis, rimosus. aura

7. (*a*) What cases follow careo, fruor, similis, capax, parco, peritus, persuadeo, pudet? (*b*) What is meant by the ablative of separation and of quality? Give instances?

8. (*a*) How is agency expressed in Latin (*a*) after the passive participle in *dus*, (*b*) after other passive forms? (*b*) When may the ablative be substituted for quam in comparative clauses? (*c*) Distinguish quidam aliquis, and quilibet.

9. Put into Latin:—1. It being ascertained (abl. absolute) that the general had come, the enemy advanced. 2. He abused (maledico) the soldiers and three days afterwards was killed. 3. Cæsar had not as great an army as Pompey. 4. He is worthy of honour. 5. There is need (opus est) of wisdom. 6. Relying (fretus) on his bravéry he pardoned the men. 7. They surpassed all in valour.

10. What adjectives are commonly used with verbs in an adverbial sense? Distinguish summus mons and supremus mons, consulere aliquem and consulere alicui, consilium and concilium, amitto and perdo.

FIRST YEAR.

HISTORY OF GREECE AND ROME.

Examiner,.....J. M. MULGAN, M.A.

1. Of what various races were the Roman people composed? Describe the constitution of the Comitia Centuriata and the Comitia Curiata.

2. Give some account of the first appearance of the Dorians in Greek history, and mention the chief Dorian States.

3. Give the date and name of the chief measures which helped to give equal civic rights to the Plebs, and in each case state the concessions won from the Patricians.

4. Trace the steps by which Rome became mistress of Italy, south of the Po, specifying the various wars and dates.

5. What were the events which led to the Second Punic war? Describe by map or otherwise Hannibal's course from the Alps to Cannæ.

6. Give the date, position and some description of the following battles Zama, Metaurus, Artemisium, Lade, Ægates, Salamis.

7. Give a brief account (not more than a few words to each) of the following. In the case of names of places give their position and important events with which they are connected. Ahala, C. Duilius, Decius Mus, Appius Claudius Cæcus, Cineas, Q. Fabius Maximus, T. Manliùs Torquatus, M. Curtius, Periander, Histiæus, Darius, Eurybiades, Aristides, Leonidas, Cleomenes, the Almnæonidæ, Algidus, Œta, Vesuvius, Ithome, Sardis, Cære, Vadimo, Janiculum, Athos, Myrcinus.

8. Give an account (*a*) of the Persian expedition under Datis and Artaphernes.

(*b*) of the proceedings of Mardoninus after the departure of Xerxes.

9. (*a*) Sketch the history of Athens, from the death of Solon to the battle of Marathon.

(*b*) Give a short account of the Ionian revolt.

10. Show, by map or otherwise, the mountain and river system of Greece.

11. (*a*) Give an account of the Spartan Constitution, as settled by Lycurgus.

(*b*) What were the functions (*a*) of Archons and the Areopagus after the time of Cleisthenes, (*b*) of Consuls, Prætors and Censors.

INTERMEDIATE EXAMINATION,

LATIN.—HORACE.—EPISTLES, BOOK I.

Examiners,..... { Rev. George Weir, LL.D.
J. Mason Mulgan, M.A.

1. Translate :—

(A) Nam quid sequar aut quem ?
Pars hominum gestit conducere publica, sunt qui
Crustis et pomis viduas venentur avaras,
Excipiantque senes quos in vivaria mittant;
Multis occulto crescit res fenore. Verum
Esto aliis alios rebus studiisque teneri :
Idem eadem possunt horam durare probantes ?
Nullus in orbe sinus Baiis praelucet amoenis,
Si dixit dives, lacus et mare sentit amorem
Festinantis heri ; cui si vitiosa libido
Fecerit auspicium, "Cras ferramenta Teanum
Tolletis, fabri."

(B) Si bene qui coenat bene vivit, lucet, eamus
Quo ducit gula ; piscemur, venemur, ut olim
Gargilius, qui mane plagas, venabula, servos
Differtum transire forum populumque jubebat,
Unus ut e multis populo spectante referret

Emptum mulus aprum. Crudi tumidique lavemur,
Quid deceat, quid non, obliti, Caerite cera
Digni, remigium vitiosum Ithacensis Ulixei,
Cui potior patria fuit interdicta voluptas.
(C) Verum seu pisces seu porrum et caepe trucidas
Utere Pompeio Grospho, et si quid petet ultro
Defer; nil Grosphus nisi verum orabit et aequum.
Vilis amicorum est annona bonis ubi quid deest.
(D) Rure ego viventem, tu dicis in urbe beatum:
Cui placet alterius sua nimirum est odio sors
Stultus uterque locum immeritum causatur inique:
In culpa est animus, qui se non effugit unquam.
(E) "Si pranderet olus patienter, regibus uti
Nollet Aristippus." "Si sciret regibus uti
Fastidiret olus qui me notat." Utrius horum
Verba probes et facta doce, vel junior audi
Cur sit Aristippi potior sententia. namque
Mordacem Cynicum sic eludebat, ut aiunt:
"Scurror ego ipse mihi, populo tu; rectius hoc et
Splendidius multo est. Equus ut me portet, alat rex,
Officium facio: tu poscis vilia rerum,
Dante minor quamvis fers te nullius egentem.
(F) Me quotiens reficit gelidus Digentia rivus,
Quem Mandela bibit, rugosus frigore pagus,
Quid sentire putas? quid credis, amice, precari?
Sit mihi quod nunc est, etiam minus; et mihi vivam
Quod superest aevi, si quid superesse volunt di;
Sit bona librorum et provisae frugis in annum
Copia, neu fluitem dubiae spe pendulus horae.
Sed satis est orare Jovem quae donat et aufert:
Det vitam, det opes, aequum mi animum ipse parabo.

2. Briefly explain the relation to the context of extracts i., iv., viii., and explain the allusions in extracts ii., iii. and vii.

3. (*a*) Give the rules for expressing imperative and interrogative sentences in Oratio obliqua or (*b*) state the circumstances under which the indicative may be used in oratio obliqua.

4. Translate and explain the construction of words in Italics. (*i*) Quis magna coronari *contemnat Olympia*.....? (*ii*) Qui recte vivendi prorogat horam, Rusticus expectat dum *defluat* amnis. (*iii*) *Vale t* possessor oportet (*iv*) Fingit equum tenera docilem *cervice* magister *Ire* viam. (*v*) *Quo mihi fortunam*, si non conceditur *uti*. (*vi*) Decedentia certis Tempora momentis sunt qui formidine nulla imbuti *spectent*. (*vii*) Scribe tui *gregis* hunc (*viii*) *Pretium* ætas altera sordet. (*ix*) Quid de quoque viro et cui *dicas* sæpe videto. (*x*) Et mihi dividuo findetur *numere* quadra. (*xi*) Quælibet

in quemvis opprobria *fingere sævus.* (*xii*) Quem res plus *nimio* delectavere Secundœ.

5. Parse the following words, and give the principal parts of the verbs: Crepat, pasta, pollicitus, plectuntur, lavemur, frugi, compesce, inulto, expergisceris, memento, aufert.

6. Give the meaning and derivation of the following words:—ampullatur arbiter, crumena, persona, piacula, bruma, plāga, plāga, privignus, excors sodes, rugosus, delirant.

7. Explain (without translation) the allusions in the following: (*a*) Ut propius spectes lacrimosa poemata Pupi. (*b*) Fautor utroque tuum laudabit pollice ludum. (*c*) Imi derisor lecti. (*d*) Locus est et pluribus umbris.

8. (*a*) What circumstances occasioned the 7th epistle (to Mæcenas) commencing "Quinque dies pollicitus me rure futurum, Sextilem totum desideror," and what does Horace say of the relations which ought to subsist between himself and his patron?

(*b*) To what amount of originality does Horace himself lay claim? How does he compare in point of originality with Plautus Lucretius or any other Roman poet? Is there any branch of poetry in which the Romans may fairly claim to be original?

(*c*) What are the general characteristics of Horatian poetry? Can you account for its universal popularity?

(*d*) How far (according to Epistles, book I.) did Horace adopt the tenets of any one philosophical school?

INTERMEDIATE EXAMINATION.

LATIN PROSE COMPOSITION.

Examiners,..... { Rev. George Weir, LL.D.
J. Mason Mulgan, M.A.

(A) Caracalla, the Roman Emperor, having said that he intended to marry one of the daughters of the Parthian King, was willingly permitted to enter Parthia; for the inhabitants, who had long feared the Romans, and had always before wished that they should be resisted, now thought that they might be safely admitted within their boundaries and that great advantages would arise to them from their friendship. How false this opinion was, need scarcely be mentioned. No sooner had the Roman armies arrived in Parthia, than the unarmed inhabitants were put to death. Even those, who had invited the Romans into their houses were not spared, and Caracalla, as if such perfidy had been honourable to him, demanded that a triumph and the surname of Parthicus should be given him.

(B) It was a sad and solemn sight to see this train of noble ladies, and the very Volscian soldiers stood in silence and pitied them and honoured them as they passed by. They found Caius sitting on the general's seat in the midst of the camp, and the Volscian chiefs were standing round him. When he first saw them he wondered what it could be; but presently he knew his mother who was walking at the head of the train, and then he could not contain himself, but leapt down from his seat and ran to meet her and was going to kiss her. But she stopped him and said "Ere thou kiss me, let me know whether I am speaking to an enemy or to my son, whether I stand in thy camp as thy prisoner or as thy mother. Shall it be said that it is to me that Rome owes her conqueror and oppressor? Had I never been a mother my country would still have been free.

THIRD YEAR.

LATIN.—PLAUTUS.—AULULARIA.

Examiner,..... ....REV. GEORGE CORNISH, LL.D.

(A) EU. Exi, inquam! age, exi! exeundum hercle tibi hinc est foras,
circumspectatrix cum oculis emissiciis!
STA. Nam cur me miseram verberas? EU. Ut misera sis,
atque ut te dignam mala malam aetatem exigas.
STA. Nam qua me nunc causa extrusisti ex aedibus?
EU. Tibi egon rationem reddam, stimulorum seges?
Illuc regredere ab ostio: illuc: sis vide, ut
incedit. At scin', quomodo tibi res se habet?
Si hercle hodie fustem cepero aut stimulum in manum,
testudineum istum tibi ego grandibo gradum.
STA. Utinam me divi adaxint ad suspendium
potius quidem, quam hoc pacto apud te serviam.
EU. At ut scelesta sola secum murmurat.
Oculos hercule ego istos, improba, effodiam tibi,
ne me observare possis, quid rerum geram.
Abscede etiam nunc, etiam nunc. STA. etiamne? EU. obe,
istic adstato. Si hercle tu ex istoc loco
digitum transvorsum aut unguem latum excesseris,
aut si respexis, donicum ego te iussero,
continuo hercle ego te dedam discipulam cruci.

(B) ME. Narravi amicis multis consilium meum
de conditione hac: Euclionis filiam
laudant; sapienter factum et consilio bono.
Nam, meo quidem animo, si idem faciant ceteri
opulentiores pauperiorum filias
ut indotatas ducant uxores domum:

met ulto fiat civitas concordior
et invidia nos minore utamur quam utimur;
et illae malam rem metuant quam metuont magis;
et nos minore sumtu simus quam sumus.
In maxumam illuc populi partemst optumum:
in pauciores avidos altercatiost,
quorum animis avidis atque insatietatibus
neque lex neque tutor capere est qui possit modum.
Namque hoc qui dicat: Quo illae nubent divites
dotatae, si istuc ius pauperibus ponitur?
Quo lubeat nubant, dum dos ne fiat comes.
hoc ita si fiat, mores meliores sibi
parent pro dote quos ferant quam nunc ferunt.
ego faxim muli, pretio qui superant equos,
sint viliores Gallicis cantheriis.

2. (*a*) Write down the name and scheme of the metre used in the above extt. and show in what respects it differs from the corresponding metre used in Greek Tragedy. (*b*) Scan the first five vss. of ext. (B). (*c*) Explain the formation of:—foras, emissiciis, extrusisti, sis, scin, grandibo, adaxint, respexis, faxim. (*d*) Show the construction of:—(*a*) Sapienter factum et consilio bono. (*b*) Meo animo. (*c*) Minore sumptu simus. (*d*) Animis avidis. (*e*) Quo lubeat nubant. (*f*) Ego faxim muli sint viliores.

3. Translate with an explanatory note when you may deem it proper the following ext. :—. (*a*) Plus iam medico mercedist opus. (*b*) Ita me di amabunt, ut ego hunc ausculto lubens. (*c*) Quin exta inspicere in sole ei vivo licet. (*d*) Filiam despondi ego, hodie nuptum huic Megadoro dabo. (*e*) Ita impuris illis omnibus adii manum. (*f*) Temperi, postquam imple-visti fusti fissorum caput. (*g*) Lege agito mecum.

4. Give the etymology and meaning of:—asseres, puteum, temeti, nundinalis, immo, frugi, mecastor, edepol, harpagatum, trifurcifer.

5. Show the meaning of the following, and give the Greek equivalents where you can:—(1) Putatur ratio. (2) Talentum magnum. (3) Lar familiaris. (4) Anui peculiaris. (5) Laverna. (6) Phylacistae. (7) Caupones. (8) Propolae.

6 (*a*) *Quaesti*;—explain this form of the Genitive. (*b*) *Quin*;—Give the etymology and various uses of *quin*. (*c*) Parse *amare* in as many ways as you can. (*d*) Give other forms of:—*amaverunt, amari, amaris*; and contract *amavisses, amavistis, noveratis, audivisti*. (*e*) Write down the principal parts of:—*parco, pario, pareo, metior, mentior, viso, video, sterno*.

7. A short account of Plautus, and his writings.

8 Translate into Latin:—

When I came to the foot of the hill, I met with a very aged man, who asked me what I was and whither bound. I told him that I was a

pilgrim going to the celestial city. Then said the old man, "Thou lookest like an honest fellow. Wilt thou be content to dwell with me for the wages that I shall give thee?" Then I asked him his name, and where he dwelt. He said his name was Adam the first, and that he dwelt in the town of Deceit. I asked him then what was his work, and what the wages that he would give. He told me that his work was many delights, and his wages, that I should be his heir at last.

B.A. ORDINARY EXAMINATION.

LATIN. { TACITUS.—ANNALS, BOOK I.
JUVENAL.—SATT. VIII. AND X.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. Translate:—

(A) Postremo promptis iam et aliis seditionis ministris velut contionabundus interrogabat, cur *paucis centurionibus*, paucioribus tribunis in modum servorum oboedirent. quando ausuros exposcere remedia, nisi novum et nutantem adhuc principem precibus vel armis adirent? satis per tot annos *ignavia* peccatum, quod tricena aut quadragena stipendia senes et plerique *truncato* ex vulneribus *corpore* tolerent. ne *dimissis* quidem finem esse militiae, sed apud vexillum tendentes alio vocabulo eosdem labores perferre. ac si quis tot casus vita superaverit, trahi adhuc diversas in terras, ubi per nomen agrorum uligines *paludum* vel inculta *montium* accipiant. enimvero militiam ipsam gravem, infructuosam: *denis* in diem *assibus* animam et corpus aestimari: *hinc* vestem arma tentoria, hinc saevitiam centurionum et vacationes munerum redimi. at hercule verbera et vulnera, duram hiemem, exercitas aestates, bellum atrox aut sterilem pacem sempiterna.

(B) Decreta eo anno triumphalia insignia A. Caecinae, L. Apronio, C., Silio ob res cum Germanico gestas. nomen patris patriae Tiberius, a populo saepius ingestum, repudiavit; neque in acta sua iurari quamquam censente senatu permisit, cuncta mortalium incerta, quantoque plus adeptus foret, tanto se magis in lubrico dictitans. non tamen ideo faciebat fidem *civilis animi*; nam legem maiestatis reduxerat, cui nomen apud veteres idem, sed alia in iudicium veniebant, si quis proditione exercitum aut plebem seditionibus, denique *male gesta re publica* maiestatem populi Romani minuisset: facta arguebantur, dicta inpune erant. primus Augustus cognitionem de famosis libellis specie legis eius tractavit, commotus Cassii Severi libidine, qua viros feminasque inlustres procacibus scriptis diffamaverat; mox Tiberius, consultante Pompeio Macro praetore, an iudicia maiestatis rederentur, exercendas leges esse respondit. hunc quoque asperavere carmina incertis auctoribus vulgata in saevitiam superbiamque eius et discordem cum matre animum.

2. (*a*) State the rules to be observed in changing *Direct* into *Indirect Discourse*. (*b*) In ext. (A) change "Quando ausuros * * perferre" into *direct*. (You may abbreviate words that are not changed.) (*c*) Show the grammatical construction of the words in Italics in the above extt. (*d*) (1) *Paucis centurionibus tribunis*:—Write an explanatory note on the Roman legion at this period, showing its divisions and subdivisions, its full complement of men, and different grades of officers. (2) *Apud vexillum tendentes*:—Explain. (3) *Triumphalia insignia*:—enumerate these. Why was a triumph not granted? (4) *Nec in acta sua jurari*:—What was the custom and when introduced?

3. Translate carefully the following extracts, adding a note grammatical, or other, where you may deem proper:—

(*a*) Mox indiscretis vocibus pretia vacationum, augustias stipendii duritiam operum ac propriis nominibus incusant vallum, fossas, pabuli materiae lignorum adgestus, et si qua alia ex necessitate aut adversus otium castrorum quaeruntur.

(*b*) Indulserat ei ludicro Augustus, dum Maecenati obtemperat effuso in amorem Bathylli; neque ipse abhorrebat talibus studiis, et civile rebatur misceri voluptatibus vulgi.

(*c*) Atque ubi primum tui copia, vetera novis et quieta turbidis antehabeo, neque ob praemium, sed ut me perfidia exsolvam, simul genti Germanorum idoneus conciliator, si paenitentiam quam perniciem maluerit.

(*d*) Primum extruendo tumulo caespitem Cæsar posuit, gratissimo munere in defunctos et praesentibus doloris socius.

(*e*) Accendebat haec onerabatque Seianus, peritia morum Tiberii odia in longum jaciens, quæ reconderet auctaque promeret.

4. (*a*) Lux reddidit terram, penetratumque ad amnem Visurgin quo Cæsar classe contenderat:"—Point out the locality of the events here described, and show that the reading *Visurgin* cannot be correct. What river is supposed to have been the one referred to? (*b*) Define the geographical situations of:—Planasia, Nauportus Treveri, Vetera, Pandateria. Give modern names when you can. (*c*) "Populo et plebi quadringenties tricies quinquies:"—Explain the method of reckoning, and give the sum here named in pounds sterling. (*d*) Point out some of the peculiarities of the style of Tacitus which distinguish him from the writers of the golden age of Latinity.

5. Translate:—

(C) Rarus enim ferme sensus communis in illa
Fortuna. Sed te censeri laude tuorum,
Pontice, noluerim sic, ut nihil ipse futuræ
Laudis agas. Miserum est aliorum incumbere famæ
Ne collapsa ruant subductis tecta columnis.
Stratus humi palmes viduas desiderat ulmos.
Esto bonus miles, tutor bonus, arbiter idem

Integer; ambiguæ si quando citabere testis
Incertæque rei, Phalaris licet imperet, ut sis
Falsus, et admoto dictet perjuria tauro:
Summum crede nefas animam præferre pudori
Et propter vitam vivendi perdere causas.
Dignus morte perit, cœnet licet ostrea centum
Gaurana et Cosmi toto mergatur aheno.

(D) Pone domi lauros, duc in Capitolia magnum
Cretatumque bovem: Sejanus ducitur unco
Spectandus! gaudent omnes. "Quae labra! quis illi
Vultus erat! nunquam si quid mihi credis, amavi
Hunc hominem." "Sed quo cecidit sub crimine? quisnam
Delator? quibus indiciis, quo teste probavit?"
"Nil horum: verbosa et grandis epistola venit
A Capreis." "Bene habet; nil plus interrogo. Sed quid
Turba Remi?" "Sequitur fortunam, ut semper, et odit
Damnatos. Idem populus, si Nurtia Tusco
Favisset, si oppressa foret secura senectus
Principis, hac ipsa Sejanum diceret hora
Augustum. Jam pridem, ex quo suffragia nulli
Vendimus, effudit curas. Nam qui dabat olim
Imperium, fasces, legiones, omnia, nunc se
Continet, atque duas tantum res anxius optat,
Panem et Circenses." "Perituros audio multos."

6. (*a*) Comment on the meaning of:—(1) Dextro pede. (2) Rigidi censura cacchini. (3) Nurtia Tusco. (4) Panem et Circenses. (5) Madidis alis. (6) Veteres cerae. (7) Nanum Atlanta. (8) Trunco Hermae. (9) Perdere naulum. (10) A Pico genus. (11) Solam Eponam. (12) Populi frons durior hujus. (*b*) Explain the geographical references in:—Gyari, Seriphos, Tabraca, Gaurana, Gallicus axis, Idumaeae portae, Setinum, Sarrana, Vervecum in patria.

7. Parse carefully the following words:—Extortum, stratus, partam, perit, citabere, discinxerit, epota, exsucta, succincta, effudit, haesuri, discutienda.

8. Write an account of the life and times of Juvenal, giving dates and naming the Emperors in whose reigns he lived.

B.A. ORDINARY EXAMINATION.

GREEK AND ROMAN HISTORY AND LATIN PROSE COMPOSITION.

Examiner, ... REV. GEORGE CORNISH, LL.D.

(N.B.—*Candidates taking both Greek and Latin may omit any two of the questions in groups* (*A*) *and* (*B*), *severally.*)

(A) *History of Greece from the end of the Peloponnesian War to the death of Philip.*

1. (*a*) An account, with dates, of the Invasion of Asia Minor by Agesilaus. (*b*) The Battle of Cnidus and its consequences.

2. What where the terms of the Peace of Antalcidas, and why was it concluded ?

3. The leading persons and events of the period of the Theban Supremacy.

4. Describe the geographical character of the Chalcidic peninsula; and define the position of Olynthus, naming also the cities in alliance with it.

5. An estimate of the character of Philip. By what line of policy and of action did he acquire the supremacy in Grecian affairs ?

(B) *The Twelve Cæsars.*

1. State in general terms the condition of political parties at Rome at the time of the death of Julius Cæsar.

2. What were the limits of the Empire at the end of the reign of Augustus, and what policy did he recommend in reference thereto?

3. Whose son was Caligula, and whence his name ? Give an account of his character and of his reign.

4. Give the dates of the accession and death of Nero, and mention notable instances of his cruelty. What were his reputation and character at the beginning of his reign ?

5. An account of the personal character, and of the objects and policy of Nerva.

6. Mention important events that occurred in the following years A. D.: —9, 14, 50, 64, 69, 70 and 79.

(C) Translate into Latin :—

When the Tarquins had been driven out of Rome, they asked help from Lars Porsena of Clusium. And he promised to do what he could. Therefore he collected an army of his allies, and came to Rome so quickly that the citizens could not destroy the Sublician Bridge. Then Horatius promised to defend the bridge while they were breaking it down. And so he, with Spurius Lartius and Titus Herminius, kept driving back the enemy. When the bridge was nearly broken down the latter retreated into the city; but Horatius stayed at his post till the bridge fell with a great crash. Then having prayed Father Tiber to hold him up, he threw himself into the river, and, though weighed down by his arms, got out safe on the nearer bank. And the Fathers honoured him with a statue and other rewards because (as they said) he had saved the city of Rome.

EXAMINATION FOR HONOURS IN CLASSICS.

THIRD YEAR.

(I.) GREEK.

Examiner,..... REV. GEORGE CORNISH, LL.D.

1. Translate, with an explanatory note when you deem it necessary :—

(A) Æschylus, Prometheus Vinctus, vss. 560—588.

2. (*a*) Account for the episode of Io in the Prom. Vinct. and point out the main intention of the Drama. (*b*) ἀλευ'—ἰλεῦ·—distinguish between these readings, and explain the forms δᾶ, πόποι and ἄδην. (*c*) Write down Doric forms, with Attic equivalents in (A). Why these Doric forms in the Attic Drama? (*d*) Write explanatory notes on:—(1) τύχαι 'Ατλαντος. (2) Τυφῶνα θοῦρον. (3) ἱποίμενος. (4) ἀχαρις χάρις. (5) ἐξωμμάτωσα. (6) ἐς τε Πυθὼ κἀπὶ Δωδωνης. (7) ἀκοιμήτῳ ῥεύματι. (8) Σκύθην οἶμον. (9) ναρθηκοπλήρωτον. (10) ἀπέδιλος. (*e*) Comment on the use by Æschylus of compound words and accumulation of epithets.

3. Translate :—

(B) Sophocles, Antigone, vss. 839—882.

4. (*a*) Give the proper designation of the part of the Stasimon, vss. 806—882, with Aristotle's definition. (*b*) Give the derivation and meaning of :—νεάταν, παγκοίτας, ἐγκληρον, ἐπίχειρα, δειράδας, ἐπίφαντον, ποταινίου, τριπόλιστον (note *variants*), μέτοικος. (*c*) ἐψαυσας ἀλγεινοτάτας ἐμοὶ μερίμνας.-κεῖνος ἐπέγνω μανίαις ψαύων τὸν θεόν (963) :-Explain these constructions with ψαύειν. (*d*) κεῖ τις ἦ σοφός(710) :—Explain this use of εἰ with the *Subj*. (*e*) vs. 71, ἀλλ' ἴσθ' ὁποία—ὁποῖα—ὁποῖᾳ—σοι δοκεῖ :—Distinguish between these variants. Also between Βορέας and Βορεάς, giving the *Gen.* of each.

5. Translate :—

(C) Theocritus, Idyl. VI., vss. 1—20.

6. (*a*) Characterise the poetry, style, and dialect of Theocritus. (*b*) Parse the following, giving Attic equivalents :—νίκη, σύρισδε, νάσω, σίξα, ἔχεν, ἐνθών, ἐπάξα, ὑφίητι, ψέ, τίν, τυ, ὥπερ, αἶκα, τήνα. (*c*) What is the *Bucolic Caesura*?

7. Translate :—

(D) Aristotle De Poetica, Chap. xxii., §§ 1-4, inclusive.

8. (*a*) Give an account of the state of the text of this Treatise, and name the principal editors and commentators of the same. (*b*) Sum-

marise the arguments in favour of the genuineness of this treatise, stating incidentally the theories that have been propounded concerning it. (*c*) Derive and define the following terms :—*προβλήματα, λύσεις, ἐποποική, διηγηματική, παραλογισμός, μεταφορά, πτῶσις, στοιχεῖοι, σύνδεσμος, ῥῆμα. ἐστι δὲ πάσης τραγῳδίας τὸ μὲν δεσις τὸ δὲ λύσις.*

(II.) LATIN.

Examiner,.....REV. GEORGE CORNISH, LL D.

1. Translate, adding an explanatory note where you deem it necessary, the following passages :—

(A) Tacitus, Annals, Book I., chap. 72.

2. (*a*) State the rules to be observed in changing *Direct* into *Indirect Discourse*. (*b*) In Chap. 17, change "Quando ausuros * * accipiant" into *direct*. (You may abbreviate words that are not changed.) (*c*) (1) *Paucis centurionibus tribunis* :—Write an explanatory note on the Roman legion at this period, showing its divisions and subdivisions, its full complement of men, and different grades of officers. (2) *Apud vexillum tendentes* :—Explain. (3) *Triumphalia insignia* :—enumerate these. Why was a triumph not granted ? (4) *Nec in acta sua jurari* :—What was the custom and when introduced ?

3. (*a*) "Lux reddidit terram, penetratumque ad amnem Visurgin quo Cæsar classe contenderat :"—Point out the locality of the events here described, and show that the reading *Visurgin* cannot be correct. What river is supposed to have been the one referred to ? (*b*) Define the geographical situations of :—Planasia, Nauportus, Treveri, Vetera, Pandateria. Give modern names where you can. (*c*) "Populo et plebi quadringenties tricies quinquies :"—Explain the method of reckoning, and give the sum here named in pounds sterling. (*d*) Point out some of the peculiarities of the style of Tacitus which distinguish him from the writers of the golden age of Latinity.

4 Translate :—

(B) Cicero, De Imp. Cn. Pomp. chap. 19 :—"Quo mihi indignius" to end.

8. (*a*) Narrate the date, object, and result of the delivery of this oration. By what other name is it designated, and why ? (*b*) Explain the following references :—(1) *Anno proximo* legati esse potuerunt. (2) Spero consules *ad senatum relaturos*. (3) *Inimicum edictum*. (4) Praeter *intercessionem*.

5. Translate :—

(C) Plautus, Aulularia, Act III., sc. 5, vss. 31-61.

4. (*a*) In ext. (C) point out what words are (1) purely Greek, and (2) derived from Greek. (*b*) "Putatur ratio;" "disputast ratio:"—explain and give the Greek for this. Also explain the following:—Vestitu et creta; sublevit os; foris crepuit; adii manum; sycophantias; laterna Punica; Gallicis cantheriis; trifurcifer. (*c*) Write down the schemes of the *Iambic Senarius* and of the *Trochaic Septenarius* of Latin Comedy, and show how they differed from the corresponding metres as used by Aristophanes. (*d*) Instance peculiarities of (1) Orthography; (2) Quantity; and (3) Grammatical construction, from Plautus. To what main facts touching the language do these point?

6. Translate:—

(D) Juvenal, Sat. viii. vss. 254-268; and x., vss. 114-132.

7. (*a*) Describe, giving etymology:—Trabeam, diadema, fasces, quinquatribus, vernula, capsae, incude et luteo. (*b*) Note the tense and mood of *laxabant, deceret, miraretur*, and explain the use of the Genitive in *legum* prima securis. (*c*) What variant for *partam* Minervam? And what interpretations of *ingenio* * * * caesa?

8. Give an account of the origin and development of *Satire* as a department of Literature among the Roman writers. Derive and give the literal meaning of the word *Satira*.

(III.) GEEEK AND LATIN PROSE COMPOSITION.

Examiner,..... Rev. George Cornish, LL.D.

(A) Translate into Greek:—

When all had spoken, a certain man came running into the camp announcing that the heavy-armed soldiers had missed their way to the place whither they had been sent. When asked by the General how he knew this, he replied that he had seen them marching along a road to the right, instead of to the left, of the mountains, which lay between the camp and the town. The General said that guides had gone out with the soldiers; and if they had followed these they could not by any means have gone wrong; but, continued he, hasten with all speed after them, that you may, if possible, overtake them, and bring them back into the right road, before they come to any harm. So, without further ado, the messenger took his departure, and after three days word came that all was well with the troops, and that they were now on the right road, and would soon reach their destination.

(B) Translate into Latin :—

Sulla's legate, L. Licinius Murena, renewed hostilities with Mithridates in the most unjustifiable way, and experienced a great defeat on the river Halys. Another of his followers, Q. Lucretius Ofella, tried to stand for the consulship without having passed through the previous stages of the quæstorship and prætorship; and Sulla in the open Forum had to commission a centurion to assassinate him. In 80 B.C. the young advocate, M. Tullius Cicero, (aged twenty-six), ventured to defend Roscius against Sulla's freedman Chrysogonus, who was enriched with the spoils of the proscribed, and though the impetuous orator had to retire to Athens, it was significant that even murder and extermination had not silenced all opponents. And that same year a young man was earning the civic crown under the walls of Mitylene in his first campaign, who had utterly refused to put away his wife, the daughter of Cinna, at the bidding of the dictator; this was the nephew of Marius, C. Julius Cæsar. And even Sulla's enthusiastic supporter, the young Pompeius, had insisted on a triumph, declaring "that men looked from the setting to the rising sun." In Spain, C. Sertorius was now victoriously resisting one emissary of the government after another. Clearly there were forces gathering which only waited for the dictator's death to rise and overwhelm his institutions. And indeed the consuls, before the fires of that extraordinary funeral pyre were extinguished, re-opened the old controversy.

(IV.) GREEK AND ROMAN HISTORY.

Grote:—Part I. to II., chaps. 1 *to* 3.

Mommsen:—Vols. I. and II.

Arnold:—Vols. I.-III.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Give a summary of Grote's account of the state of society and of manners as exhibited in Grecian Legend.

2. Name famous legendary localities, and show how the geography of the Legends became gradually modified as real geographical knowledge increased.

3. Indicate the main geographical features of Greece, and point out how the political relations and interests of the inhabitants were affected by these.

4. Derive the term *Amphictyony*. What were the original character and functions of the Amphictyonies?

5. What were the tribal relationships of the inhabitants of Corinth, Thebes, Sparta, Rhodes, Athens, Phocis, Phocaea, Corcyra, Syracuse and Naxos, severally?

6. Describe the early state of the city of Rome, its territory and scenery

7. (*a*) Narrate the events which led to the intervention of Pyrrhus in the affairs of Italy. (*b*) Give an account of the battle of Heraclea, and of its immediate results.

8. Comment on the advantages and disadvantages of theRoman Supremacy in Italy.

9. Set forth the military and political importance of Sicily to the contending parties in the Punic Wars.

10. Give a summary of Mommsen's chapter on "Roman Faith and Manners," and how these were influenced by the "New Hellenism"

B.A. EXAMINATION FOR HONOURS.

(I.) GREEK PROSE WRITERS.

Examiner,.....Rev. George Cornish, LL.D.

1. Translate adding an explanatory note where you deem it necessary:—

(A) Demosthenes, DeCorona, page 299;—*σὺ δὲ ὁ σεμνὸς ἀλλ᾽ * * τὴν αὐτοῦ τήχην.* (Ed. Tauchnitz).

(B) Aeschines, Contra Ctesphontem, § 189 (Ed. Teubner).

2. (*a*) Whence were the religious rites described in ext. (A) imported into Athens? (*b*) Give the derivation and proper meaning of *ὀλολύζω*. (*c*) Some have surmised that Aeschines added ext. (B) to his speech after the reply of Demosthenes had been made:—on what grounds? (*d*) Write explanatory notes on the following:—(*a*) *εἰς τὸ τριηραρχικόν*. (*b*) *ἐπὶ ἴσον τῇ χορηγίᾳ χρωμένους*. (*c*) *καταβαλόντα ἐᾶν ἐν ὑπωμοσίᾳ*. (*d*) *συγκλήτου ἐκκλησίας ὑπὸ τῶν στρατηγῶν γενομήνης*. (*e*) *καὶ τὸ μέρος τῶν ψήφων οὐ λαβων*. (*f*) *καὶ σὺ προὐξένεις αὐτῶν*. (*g*) *τὴν Μυσῶν λείαν καλουμένην*. (*h*) *ἐν τοῖν δυοῖν ὀβολοῖν ἐδεώρουν ἄν*.

3. Translate:—

(C) Thucydides, Book VI Chap. 76.

(D) Herodotus, Book IX., Chap. 53.

(E) Xenophon, Hellenics, Book I., Chap.7, §§ 32—34, inclusive.

4. (*a*) In ext. (C).—Explain the construction of *τοὺς μὲν λιποστρατίαν * * * κατεστρέψαντο*, and of *περὶ δὲ οἱ μὲν * * κακοξυνετωτέρου δέ*. (*b*) (1) Give the various meaning of *τίθεσθαι τὰ ὅπλα*. (2) *τοῦ Πιτανητέων λόχου*;—explain. (*c*) *κατὰ τὸ Κανωνου ψήφισμα*,—what were the provisions of this, and what illegalities weae committed in the trial and condemnation of the generals? (*d*) What is the relative value of Thucydides and Herodotus as historical authorities? On what grounds is their respective value to be estimated?

5. Write explanatory notes on the following from Hellenics Book II. :—(*a*) *ἀπὸ τῆς ὥρας ἐτρέφοντο* (i. § 1). (*b*) *ὅτι οὐ διέωσαν διὰ τῆς κόρης τὰς χεῖρας* (*ib.* 8). (*c*) *τῶν μακρῶν τειχῶν * * * ἑκατέρου* (ii. § 15). (What does Thucydides say about the Long Walls?) (*d*) *ἀπὸ συκοφαντίας ζῶντας* (iii. § 12.) (*e*) *κόθορνος ἐπικαλεῖται* (ib. 31). (Illustrate from Aristophanes). (*f*) *ἐπὶ τὸν κωφὸν λιμένα* (iv. § 31).

6. Translate:—

(F) Aristotle, De Poetica, Chap. xxii., §§ 1–4, inclusive.

7. (*a*) Derive and define the following terms :—*προβλήματα, λύσεις, ἐποποιική, διηγηματική, παραλογισμός, μεταφορά, πτῶσις, στοιχεῖον, σύνδεσμος, ῥῆμα. ἔστι δὲ πάσης τραγῳδίας τὸ μὲν δεσις τὸ δὲ λύσις.* (*b*) What is the condition of the Text of this treatise, and how may it be accounted for?

(G) Plato, De Republica, Book I., Chap. 21, down to *ἰατρικοῦ δέ*. Explain the use of *μέλλω*.

9. Translate:—

(H) *Καὶ γιγνομένων ἐν Ῥώμῃ σημείων ἐκ Διὸς φοβερῶν, οἱ μὲν τὰ Σιβύλλεια ἐπισκεπτόμενοι δέκα ἄνδρες ἔφασαν ἐξ οὐρανοῦ τι ἐς Πεσινοῦτα τῆς Φρυγίας, ἔνθα σέβουσιν οἱ Φρύγες θεῶν μητέρα, πεσεῖσθαι τῶνδε τῶν ἡμερῶν, καὶ δεῖν αὐτὸ ἐς τὴν Ῥώμην ἐνεχθῆναι. μετ' οὐ πολὺ δὲ πεσεῖν τε προσηγγέλθη καὶ ἐς Ῥώμην ἐκομίσθη τὸ βρέτας. καὶ τὴν ἡμέραν ἑορτάζουσι καὶ νῦν μητρὶ θεῶν, ἣ τότε ἐκομίσθη. λέγεται δὲ τὴν ναῦν, ἣ ἤνεγκεν αὐτό, ἰλύι τοῦ ποταμοῦ τοῦ Τιβέριος ἐνεχεθεῖσαν οὐδεμιᾷ μηχανῇ σαλεύεσθαι, μέχρι, τῶν μάντεων προειπόντων ἕψεσθαι μόνως εἰ γυνὴ καθαρεύουσα ξένων ἀνδρῶν ἑλκύσειεν, Κλαυδίαν Κυίνταν, μοιχείας ἔγκλημα ἔχουσαν ἔτι ἄκριτον, καὶ δ' ἀσωτίαν ἐς αὐτὸ πιθανωτάτην οὖσαν, ἐπιθειάσαι τε πολλὰ περὶ τῆς ἁμαρτίας, καὶ ἀναδήσασθαι τῇ μίτρᾳ τὸ σκάφος. καὶ ἡ θεὸς ἕσπετο.*

(II.) GREEK POETS.

Examiner, ... Rev. George Cornish, LL.D.

1. Translate, with an explanatory note when you deem it necessary :—

(A) Æschylus, Prometheus Vinctus, vss. 560–588.

(B) Æschylus, Seven against Thebes vss. 78—93.

2. (*a*) Account for the episode of Io in the Prom. Vinct. and point out the main intention of the Drama. (*b*) *ἀλευ'*—*ἀλεῦ·*—distinguish between these readings, and explain the forms *δᾶ, πόποι* and *ἀδην*. (*c*) Scan the first two vss. of ext. (B), giving the name and scheme. (*d*)

δίκαν·—give the etymology and show how the word came to be used thus. (*e*) Point out the metaphors in ext. (B) and cite similar expressions from Sophocles. (*f*) Comment on the use by Æschylus of compound words and accumulation of epithets.

3. Translate :—

(C) Sophocles, Antigone, vss. 839–882.

4. (*a*) Give the proper designation of the part of the Stasimon, vss. 806–882, with Aristotle's definition. (*b*) Give the derivation and meaning of :—*νεάταν, παγκοίτας, ἔγκληρον, ἐπίχειρα, δειράδας, ἐπίφαντον, ποταινίου, τριπόλιστον* (note *variants*), *μέτοικος*,—*ἔψανσας ἀλγεινοτάτας ἐμοὶ μερίμνας*,—*κεῖνος ἐπέγνω μανίαις ψαύων τὸν θεόν* (963) :-Explain these constructions with *ψαύειν. κεἰ τις ἦ σοφός* (716) :—Explain this use of *εἰ* with the *Sub.* (*d*) vs. 71, *ἀλλ' ἴσθ' ὁποία—ὁποῖα—ὁποῖα—σοι δοκεῖ* :—Distinguish between these variants. Also between Βορέας and Βορεας, giving the *Gen.* of each.

5. Translate :—(D) Aristophanes, The Frogs, vss. 875—906.

6. (*a*) What are the points of ridicule against Euripides in the above ext., and generally throughout this play, and are they well grounded ? (*b*) Scan vss. 895-98 and 905—6, giving names and schemes. (*c*) Write a note on the purpose, structure, and *Dramatis Personæ* of this play. (*d*) Explain briefly the following references :—(1) *Κλεοφωντος * * θρηκία χελιδών.* (2) *παραπετάσμασιν τοῖς Μηδικοις.* (3) *θηραμένης ὁ κομψός.* (4) *οὐ Χῖος ἀλλὰ Κεῖος.* (5) *οἱ Κεραμῆς.* (6) *σκολίων Μελέτου.*

7. Translate :—

(E) Theocritus, Idyl. VI., vss. 6–20.

8. (*a*) Characterise the poetry, style, and dialect of Theocritus. (*b*) Parse the following, giving Attic equivalents :—*νίκη, σύρισδε, νάσω, σίξα, ἔχεν, ἐνθών, ἐπάξα, ὑφίητι, ψέ, τίν, τν, ὤπερ, αἰκα, τήνα.* (*c*) What is the *Bucolic Caesura ?*

9. Translate :—

(F) Pindar, Olymp. IX., vss. 102–120.

10. (*a*) What is the subject of this Ode, and what is the fundamental thought ? (*b*) Explain :—*τήνελλα, κεχλαδώς, τριπλόος, φόρμιγγ' ἐλελίξων, στεφάνων ἄωτοι, σκύταλον, κορᾶν * * . * Κρονιδᾶν.*

11 (G.) Hesiod, Works and Days :—vss. 693–703.

12. (*a*) What is the Aeolic Digamma ? Point out any traces of it in the above extt. (*b*) Give the exact meaning of the title *Ἔργα καὶ καὶ Ἡμέραι.* (*c*) When and where did Hesiod live ?

(III.) LATIN PROSE WRITERS.

Examiner,..... .....Rev. George Cornish, LL.D.

1. Translate the following extracts into English, adding a brief comment where any peculiar form or construction seems to you to require it :—

(A) Tacitus, Histories, Book I., chaps. 74 and 75.

2. (*a*) Explain the use of the Subjunctive in *legisset*, and *quam ut viderentur*. (*b*) *Gnaris;*—the Mss. have *ignaris;* distinguish and show that of the text to be preferable. (*c*) Write short explanatory notes on the following :—(1) Potens pecunia et orbitate. (2) In Palatium ac fora. (3) Pontificatus auguratusque. (4) Hispaliensibus et Emeritensibus. (5) Insularum fundamenta. (6) Lustrata urbe.

3. Translate :—

(B) Tacitus, Annals, Book II., chap. 34.

4. (*a*) In ext. (B) comment on the force of the Tense of *abire*, *cedere*, and *relinquebat*. (*b*) Sketch the state of public life at Rome as indicated by this chap. (*c*) Explain briefly the references, historical, geographical, or other, in the following :—(1) Trucidantium Crassum. (2) Arsacidarum sanguine. (3) Apud Dahas. (4) Ad census Galliarum. (5) Insula Batavorum. (6) Saliari carmine. (*d*) Instance points of usage and style :—(1) Peculiar to Tacitus. (2) Grammatic Graecisms. (3) Common to the Silver period of the language.

5. Translate :—

(C) Livy, Book XXII., chap. 57.

6. (*a*) *Vestales;*—how many were there, and what were their functions? (*b*) *Pontifices minores;*—explain. Give the etymology of *pontifex*. (*c*) Cite other instances of human sacrifice in Roman History. (*d*) Explain the following extracts from book XXI. :—(1) Inter motum Africae. (2) Praerogativam militarem. (3) Agmine quadrato. (4) Dum vulnus ducis *curaretur*. (Why subjunct?) (5) Nono die in jugum Alpium perventum est. What part of the Alps? What is Livy's route, and how does it differ from that of Polybius?

7. Translate :—

(D) Cicero, De Imp. Cn. Pomp. chap. 19 :—"An Caius Falcidius" to end.

8. (*a*) Narrate the date, object, and result of the delivery of this oration. By what other name is it designated, and why? (*b*) Explain the following references :—(1) *Anno proximo* legati esse potuerunt. (2) Spero consules *ad senatum relaturos*. (3) *Inimicum edictum*. (4) Praeter *intercessionem*.

9. Translate :—

(E) Cicero, De Off. Book III., Chap. 23.—"Quid si tyrannidem" to end.

10. (*a*) Diogenes, Antipater;—who were they? (*b*) *Micando victus; cuniculos agat; orichalcum;*—explain.

11. Translate:—

Gratulor Baiis nostris, si quidem, ut scribis, salubres repente factae sunt, nisi forte te amant et tibi adsentantur et tam diu, dum tu ades, sunt oblitae sui. Quod quidem si ita est, minime miror caelum etiam et terras vim suam, si tibi ita conveniat, dimittere. Oratiunculam pro Deiotaro, quam requirebas, habebam mecum, quod non putaram. Itaque eam tibi misi: quam velim sic legas, ut causam tenuem et inopem nec scriptione magno opere dignam. Sed ego hospiti veteri et amico munusculum (volui) mittere levidense crasso filo, cuius modi ipsius solent esse munera. Tu velim animo sapienti fortique sis, ut tua moderatio et gravitas aliorum infamet iniuriam.

(IV.) LATIN POETS.

Examiner,.....Rev. George Cornish, LL.D.

1. Translate, adding an explanatory note where you may deem it necessary on any peculiar form or construction:—

(A) Horace, Satires, Book I., Sat. iv., vss. 86-105.

2. Explain the following in Sat. iv.:—(*a*) Tribus lectis, (*b*) imus, (*c*) qui praebet aquam, (*d*) nigrae fucus loliginis, (*e*) aerugo mera, (*f*) judicibus selectis, (*g*) porticus, (*h*) dignus describi.

3. Translate:—

(B) Juvenal, Sat. viii., vss. 254-268; and x., vss. 114-132.

4. (*a*) Describe, giving etymology:—Trabeam, diadema, fasces, quinquatribus, vernula, capsae, incude et luteo. (*b*) Note the tense and mood of *laxabant*, *deceret*, *miraretur*, and explain the use of the Genitive in *legum* prima securis. (*c*) What variant for *partam* Minervam? And what interpretations of *ingeniis* * * * caesa?

5. Translate:—

(C) Persius, Sat. v., vss. 30-44; and vi., vss. 51-66.

6. (*a*) Point out peculiarities of construction by Persius. (*b*) Whom did he take as his literary model? How would you account for his frequent obscurity? (*c*) Cite passages from these two satires of doubtful and disputed interpretation. (*d*) Derive:—Camena, insulso, pictae, equidem, putris, agaso, satyrum, raro, tetrico, artocreas. (*e*) *Cor* Enni, etc.:—Explain this use of the word *cor*, and the reference to Ennius.

7. Translate:—

(D) Plautus, Aulularia, Act v., sc. l., vss. 1-15.

(E) Terence, Adelphi, Act ii., sc. 4, vss. 7-23.

8. (*a*) Write down the schemes of the *Iambic Senarius* and of the *Trochaic Septenarius* of Latin Comedy, and show how they differed from

the corresponding metres as used by Aristophanes. (*b*) Describe the practice designated by the verb *contaminare*, and illustrate from the Adelphi. (*c*) Comment on the use of the *Prologue* by Plautus and Terence, severally. On what grounds have the prologues of Plautus been held to be spurious (*d*) Instance peculiarities of (1) Orthography; (2) Quantity; and (3) Grammatical construction, from Plautus. To what main facts touching the language do these point?

9. Translate:—

Ergo regibus occisis subversa iacebat
Pristina maiestas soliorum et sceptra superba,
Et capitis summi praeclarum insigne cruentum
Sub pedibus vulgi magnum lugebat honorem;
Nam cupide conculcatur nimis ante metutum.
Res itaque ad summan faecem turbasque redibat,
Imperium sibi cum ac summatum quisque petebat.
Inde magistratum partim docuere creare
Iuraque constituere, ut vellent legibus uti.
Nam genus humanum, defessum vi colere aevom,
Ex inimicitiis languebat; quo magis ipsum
Sponte sua cecidit sub leges artaque iura.
Acrius ex ira quod enim se quisque parabat
Ulcisci quam nunc concessumst legibus aequis,
Hanc ob rem est homines pertaesum vi colere aevom.
Inde metus maculat poenarum praemia vitae.

Lucretius.

(V.) LATIN PROSE COMPOSITION.

Examiner,.....REV. GEORGE CORNISH, LL.D

Translate into Latin:—

For three days Rome held holiday. Every one was dressed in white the temples were thrown open, and from their portals issued clouds of sweet incense. The route of the triumph was lined with spectators; the circus of Flaminius on the Campus Martius, and the great circus between the Aventine and the Palatine, through both of which the procession would pass, were thronged from an early hour. The Forum, too, was furnished with tiers of temporary seats, every one of which was crowded. Starting from the Campus Martius, the Via Triumphalis ran through the circus of Flaminius, then through the Porta Triumphalis where the Capitoline comes near to the river bank, on by the little stream which ran through the Circus Maximus, trending then to the left along the valley between the Palatine and the Cælian, gaining the entrance to the Via Sacra on the Velian, and thence descending by the Fabian Arch, crossing the Forum, past the Mamertine dungeon and the Vulcanal, up the cleft of the Capitoline to the

great Temple of Jupiter. The first day was occupied with the long procession of two hundred and fifty carriages, which bore the priceless statues and pictures filched from the cities of Greece. The second day the people watched the train of captured arms pass by, especially the forests of long *sarissæ* taken from the slaughtered phalangites; then there followed three thousand men carrying vases of money, the hoards of unhappy Perseus. At length the third day dawned. The procession was headed by a hundred and twenty comely kine decked with streamers, led by youths beautifully girdled; next followed a troop of children singing, each of whom carried a golden libation-bowl; then came men carrying seventy-seven vases, each containing three talents of gold, and great golden goblets which the king had used. The most unsympathetic face must have been touched with sadness when there came in sight, immediately after the chariot and the arms and the crown of Perseus, the discrowned king himself, his noble figure bent with shame and anguish, and just in front of him his three children, who were weeping bitterly. He had prayed to be spared this last disgrace, and Paulus, the Roman through and through, had answered he could spare himself by suicide.

(VI.) GREEK PROSE COMPOSITION.

Examiner,.....Rev. George Cornish, LL.D.

Translate into Greek (accented) :—

Whilst these things were passing in Greece, the Athenians were still actively engaged in prosecuting war against Persia. The confederate fleet was hovering about the coasts of Cyprus and Phœnicia; and the revolt of Inarus gave them an opportunity to carry the war into Egypt. Inarus, a Libyan prince and son of Psammetichus, was bent on expelling the Persians from Egypt and obtaining the sovereignty of that country; and with this view he solicited the assistance of the Greeks. The Athenian fleet at Cyprus, amounting to 200 triremes, accordingly sailed to the Nile, and proceeded up that river as far as Memphis. From this city they succeeded in expelling the Persians, who, however, maintained themselves in a kind of citadel or fortification called "the White Fortress." The siege of this fortress had already lasted four or five years, when Artaxerxes sent a large army, together with a Phœnician fleet, into Egypt, under the command of Megabyzus, who compelled the Athenians to raise the siege and to retire to an island in the Nile, called Prosopitis, as the Persians had prevented their further retreat by obstructing the lower part of the river. Here the Athenians offered a long and heroic resistance, till at length Megabyzus, having diverted one of the channels which formed the island, was enabled to attack them by land. The Athenians, who had previously burnt their ships, were obliged to capitulate.

(VII.) HISTORY OF GREECE AND ROME.

Examiner,.....Rev. George Cornish, LL.D.

1. (*a*) Give an account of Greek colonization; and show in what respects it differed from that of Rome and that of England. (*b*) The migrations, settlements and colonies of the Doric race.

2. (*a*) What character did the Greeks attach to the word τύραννος? (*b*) Specify the principal Despotisms established in Greece.

3. (*a*) The political and social reforms of:—(1) Solon; (2) Cleisthenes; (3) Pericles, severally. (*b*) What were the general features of the foreign policy of Pericles. (*c*) What grounds are there for supposing that, had he lived, the result of the Peloponnesian war would have been different?

4. The extent and immediate results of the conquests of Alexander the Great, and their consequences to the world.

5. What causes operated to prevent the Greeks from becoming a powerful and conquering nation like the Romans?

6. Write a summary of Mommsen's chapter on "The Beginnings of Rome."

7. An account of the ethnology and early settlements of the Celts, and of their appearances on the scene of Italian affairs.

8. (*a*) What were the great powers of the civilized world at the time of the Second Punic war? (*b*) What were the causes of the early successes and of the final failure of the Carthaginians in this war? (*c*) Comment on the statement that this war gave Rome the empire of the world.

9. Trace the events in the interference of Rome in the political affairs of Greece which led to the final subjugation of Greece.

10. Write short notices of the leading political personages and events in the affairs of Rome between the death of Caius Gracchus and the assassination of C. Julius Cæsar.

(VIII.) GENERAL PAPER.

Examiner,.....Rev. George Cornish, LL.D.

1. (*a*) Derive and define the term *Dialect*. To what causes may dialectic varieties be assigned? (*b*) What are the leading characteristics of the Doric and Attic dialects, severally? (*c*) Enumerate the principal writers in the several dialects of Greek.

2. Derive and define the term *Case*, and show the origin of the terms *Oblique Cases*.

3. (*a*) To whom is the system of Greek accentuation attributed? (*b*) Define *Enclitics*, *Proclitics*, and *Anastrophe*. (*c*) Distinguish between:—σῖγα, σίγα, σιγᾶ, and σιγά. (*d*) Give the principal rules for the accentuation of the Greek verb.—(*e*) Accentuate, with the proper *spiritus*, the following ext.:—

Δυο εν Ευβοιᾳ Φιλιππος κατεστησε τυραννους, τον μεν απαντικρυ της Αττικης επιτειχισας, τον δε επι Σκιαθῳ· υμεις δε ουδε ταυτα απελυσασθε, ει μηδεν αλλο εβουλεσθε, αλλ' ειακατε· αφεστατε δηλον οτι αυτῳ.

5. (*a*) Explain the method of reckoning by Olympiads, and when and by whom it was introduced. (*b*) What year B. C. corresponds to Ol. 87· 2?

4. (*a*) Compare the earlier and later uses of the Greek Article. (*b*) What classes of nouns may be used *Anarthrous?* (*c*) Instance traces of lost cases in Greek and Latin. (*d*) Classify the various uses of the *Middle Voice* in Greek. How does the Latin provide for the want of the same? (*e*) Are there any traces in Latin of a *Middle Voice* and of an *Aorist Tense?*

6. (*a*) The origin of the *Chorus* in Greek Tragedy. (*b*) What was the normal number of the Chorus? (*c*) Which of the Attic Dramatists gave it most importance?

7. (*a*) From what sources were the Comedies of Plautus and Terence derived? (*b*) What is meant by *Fabula togata*, *palliata*, and *praetextata?* (*c*) In what departments of poetry did the Romans show originality?

8. (*a*) Give the names, with dates, of the Greek comedians who succeeded Aristophanes. (*b*) Give Donaldson's classification of Greek plays, with the substance of his remarks on the origin of Comedy and Tragedy among the Greeks. (*c*) Give also the etymology of the terms *τραγῳδία* and *κωμῳδία*.

9. Give the equivalent English proverbs for the following Greek ones:—

(1) *δελφῖνα νήχεσθαι διδάσκειν.* (2) *γάλα ὀρνίθων.* (3) *γλαῦκ' Ἀθήναζε.* (4) *ἐγὼ δὲ καὶ σὺ ταὐτὸν ἕλκομεν ζυγόν.* (5) *ἐκδεδαρμένου δέρεις.* (6) *ἐλέφαντα ἐκ μυίας ποιεῖν.* (7) *ἔνεστι καὶ μύρμηκι χολή.* (8) *ἐκ τοῦ γὰρ ὁρᾶν γίνετ' ἀνθρώποις ἐρᾶν.* (9) *πολλὰ μεταξὺ πέλει κυλικὸς καὶ χείλεος ἄκρου.* (10) *δόρυ καὶ κηρύκιον.*

MATHEMATICS AND NATURAL PHILOSOPHY.

FIRST YEAR.

EUCLID—ARITHMETIC.

Examiners,..... { ALEXANDER JOHNSON, LL D.
G. H. CHANDLER, M.A.

The answers are to be written on two separate sets of papers headed A and B respectively to correspond to the questions.

A.

1. Equiangular parallelograms which are equal in area, have their sides about the equal angles reciprocally proportional.

2. Find a mean proportional between two given straight lines.

3. On a given straight line construct a segment of a circle, which shall contain an angle equal to the angle of an equilateral triangle.

4. Prove that the angles of a pentagon are together equal to six right angles.

5. If a besieged garrison have 4 months' provisions at the rate of 18 oz. per day, how long would they be able to hold out if each man were allowed only 12 oz. per day.

6. Find the number of gallons of water in a rectangular tank, 6 feet long by 2 wide, by $1\frac{1}{2}$ ft. deep, being granted that a cubic foot of water weighs $62\frac{1}{2}$ lb., and that a gallon of water weighs 10 lbs.

B.

7. Find (by propositions in Bk. I.) a square which shall be equal to the sum of three given squares, and another which shall be equal to half their sum.

8. The straight line drawn at right-angles to the diameter of a circle from the extremity of it, touches the circle.

9. Describe an isosceles triangle which shall have each of the angles at the base double of the vertical angle.

10. The bisector of the exterior vertical angle of a triangle divides the base externally into segments which have the same ratio as the sides have.
(*a*) P is a point in a straight line A B, determine a point Q in A B produced so that A Q : Q B :: A P : P B.

11. What sum at 6 per cent. interest will yield $200 per annum?

12. What is the distance between the opposite angles of a rectangle whole length is 3·75, and breadth 2·01 inches?

FIRST YEAR.

TRIGONOMETRY—ALGEBRA.

Examiners,..... { ALEXANDER JOHNSON, LL.D.
G. H. CHANDLER, M.A.

The answers are to be written on two separate sets of papers headed A and B respectively to correspond to the questions.

A

1. Two straight lines are inclined to one another at an angle of $1''$ find how far they must be produced in order that the distance between them should be $\frac{1}{10}$ of an inch.

2. Construct the angle whose tangent is $\frac{3}{4}$ and find its cosine, sine, and secant.

3. If the sine of an angle be equal to $\frac{1}{2}$, find the sine of twice the angle.

4. Prove the rule that a quantity may be transferred from one side of an equation to another changing its sign, without affecting the truth of the equation.

5. Prove $a^0 = 1$, $\qquad a^{-1} = \frac{1}{a}$.

6. Divide 1 by $1-x$, and show that if x be less than 1, the quotient will get nearer to the value of $\frac{1}{1-x}$ the more terms we take, but if x be greater than 1, the quotient does not by itself at all express the value of the fraction.

B

7. Name the angles, (*i*) of which the cosines are $\frac{1}{2}$, (*ii*) of which the tangents are -1, (*iii*) of which the cosecants are -2.

8. Given $\tan A = 2$, find the value of $\frac{\sec A - \cos A}{\sin A}$.

9. Prove that $\tan (A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$, and hence deduce the formula for $\tan A$ in terms of $\tan \frac{A}{2}$.

10. Show that in any tringle, $cos\ A = \frac{b^2 + c^2 - a^2}{2\,b\,c}$. Hence find the value of $cos\ \frac{A}{2}$ in terms of the sides.

11. Find x from the equations—

(1) $a + x - \sqrt{a^2 + x^2} = b$,

(2) $8\,x + \frac{7}{x} = \frac{65}{7}x$,

(3) $\frac{5\,x}{x+4} - \frac{3\,x-2}{2\,x-3} = 2$;

and x and y from

(4) $\begin{cases} x^2 + x\,y = 66 \\ x^2 - y^2 = 11. \end{cases}$

12. Show that $\sqrt{8} \times \sqrt[3]{6} \times \sqrt[4]{54} = 12\,\sqrt[12]{6}$.

13. Two sides of a right-angled triangle are 3 and 6 feet, respectively, shorter than the third; find the three sides.

INTERMEDIATE EXAMINATION.

EUCLID—ARITHMETIC.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Give Euclid's definition of the equality of the ratios of two pairs of magnitudes, and apply it to show that in the *same* circle angles at the centre have the same ratio as the arcs on which they stand.

2. Define duplicate ratio, and prove that similar triangles are in the duplicate ratio of their homologous sides.

a. Prove that this ratio is the same as that of the squares of the sides.

3. From a given straight line cut off one-third.

4. In any right-angled triangle, any rectilineal figure described on the side subtending the right angle is equal to the sum of the similar and similarly described figures on the sides containing the right angle.

5. From a given point inside a given circle draw the shortest line to the circumference and prove it.

6. At a given point on a circle there can be only one tangent.

7. If a straight line be bisected, the square on the whole line is four times the square on the half. Prove this, or else the more general proposition given by Euclid.

8. Standard silver is composed of 37 parts of pure silver and 3 of copper, and 1 lb. Troy of this metal yields 66 shillings stg; what weight of pure silver is there in 20 shillings?

9. Find the side of a square whose area is equal to 14 sq. feet 11 sq. inches.

10. Reduce 12h. 55m. 21s. to the decimal of a day.

11. Which is the greatest, and which the least of $\frac{2}{13}$ $\frac{7}{45}$ $\frac{3}{20}$?

12. Find the square root of .064.

INTERMEDIATE EXAMINATION.

TRIGONOMETRY—ALGEBRA.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. Calculate the height of a hill, its angle of elevation at the bottom being 45°, while 300 yards from the bottom, measured on a horizontal plane, its elevation is found to be 25° 30′.

2. The sides of a triangle are:—a = 2,134 feet, b = 1,617 feet, and c = 815 feet; find the angle A.

3. In a right-angled triangle given $a = 1157$ and $B = 58° 03' 27''$, find A and b.

4. Define a *logarithm*, and prove the rule for multiplication by logarithms.

5. Calculate, using logarithms, in how many years a sum will double itself at 5 per cent. *compound* interest.

6. Find the sine, cosine and tangent of 45° (to three places of decimals).

7. Prove

$$\cos A = \sqrt{\frac{1 \cos^2 A}{\tan^2 A}};\ \sec A = \sqrt{1 + \tan^2 A};\ \text{Cos } A = \sqrt{\frac{\text{Cosec.}^2 A - 1}{\text{Cosec. } A}}.$$

8. The sides of a triangle are in the same ratio as the sines of the opposite angles.

9. Solve the equations—

(*a*) $\frac{a x}{b} + \frac{c x}{f} = g x + \frac{1}{f}$ $(f h - c x.)$

(*b*) $\frac{11}{12 x + 11} + \frac{5}{6 x + 5} = \frac{7}{4 x + 7}$.

(c) $a x + b y = c$; $\frac{a}{b+y} - \frac{b}{a+x} = 0$.

(d) $\sqrt{x-a} = \sqrt{x+\sqrt{b+x}}$.

(e) $x^2 - 14x = 120$.

10. Find the two parts into which a line whose length is l must be divided so that the rectangle under the whole and one part shall be equal to four times the square of the other. Verify your result.

11. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$, prove $\frac{a}{b} = \frac{m a + n c + p e}{m b + n d + p f}$.

12. Reduce $\frac{x^2+4x+3}{x^2+5x+6}$ to its lowest terms.

13. Simplify $\frac{\frac{a+x}{a-x} + \frac{a-x}{a+x}}{\frac{a+x}{a-x} - \frac{a-x}{a+x}}$.

14. Find the remainder when $x^3 - p x^2 + q x - r$ is divided by $x - a$.

THIRD YEAR.

MECHANICS—HYDROSTATICS.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Define "force." Explain carefully how it is measured in (1) Statics, (2) Dynamics? State the relation between the two measures, whence it is derived, and upon what the proof of its truth depends.

2. A number of parallel forces P, P', P'', &c., are applied at points whose perpendicular distances from a given plane are x, x', x'', &c., respectively, if X be the distance of the point of application of their resultant prove that

$$(P + P' + P'' + \&c.)\, X = Px + P'x' + P''x'' + \&c.$$

3. A body of given weight is kept at rest on a given smooth inclined plane by a pressure parallel to the length of the plane, find the ratio of the pressure to the weight.

4. A ball is fired horizontally with a velocity of 1600 feet per second from a gun which is at the top of a precipice 200 feet high, find (1) how long a time will elapse before it strikes the ground; (2) at what distance from the foot of the precipice it will strike.

5. A weight Q resting on a smooth horizontal table is drawn along the table by a weight P attached to Q by means of a horizontal cord passing over a pulley placed at the edge of the table; find the tension of the cord.

6. Show by an approximate calculation that a foot-pound is roughly about $13\frac{1}{2}$ millions of *ergs*.

7. If a railway carriage, weighing 7·21 tons, moving at the rate of 30 miles per hour, describe a portion of a circle, whose radius is 460 yards, calculate its centrifugal force in tons.

8. If the density of the atmosphere were *uniform*, calculate its height in miles, supposing the barometric pressure to be 15 lbs. to the square inch, assuming the weight of 100 cubic inches of air to be 31 grains.

9. State and prove the principle of Archimedes for bodies immersed in a liquid.

(*a*) If 20 lbs. of cork (*sp. gr* = ·24) be immersed in water, with what force will it rise to the surface?

10. Find the effective pressure on the piston in the suction pump.

11. How is the specific gravity of cork ascertained? Explain fully.

12. A cylindrical glass jar of given length b is turned mouth downwards and partly immersed in water; if a be the length of part not immersed, and h the height of the barometer in inches, calculate a formula for finding the height of the surface of the water within the cylinder.

THIRD YEAR.

DESCRIPTIVE ASTRONOMY—OPTICS.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. Define *variable* stars. State generally what is known of the physical constitution of the stars. How has this knowledge been obtained?

2. Classify the Nebulæ and describe their nature. Name some that are visible to the naked eye on a dark night.

3. State how the time of rotation of the sun on its own axis has been ascertained, and also the direction of the axis.

4. Name the principal planets in the order of distance from the sun, indicating those that have satellites, and giving the number for each. What is there remarkable in the directions of their rotations on their axes, and of their revolutions round the sun.

5. Draw a rough sketch of the Earth as it might be seen from the sun at the summer solstice (define) when it is noon at London and explain it.

6. What is the cause of an eclipse of the moon. Describe the eclipse generally, stating on which side of the moon it begins.

7. Explain and prove the formula for a *concave* spherical mirror :—

$$\frac{1}{d} + \frac{1}{D} = \frac{2}{r}$$

a. Prove that the same formula is true for converging rays falling on a *convex* spherical mirror, stating the rule for signs.

8. A candle flame is placed 10 inches from a convex lens of 6 inches focal length and on the axis of the lens. A concave lens of 8 inches focal length is placed directly behind the lens at a distance of 6 inches from it : determine whether an image can be formed on a screen, and the position of the screen.

9. Define chromatic aberration of a lens. Show that an achromatic combination of lenses is possible, investigating a formula.

10. The distance at which a short-sighted person can read a book with ease is 5½ inches, what kind of spectacles should he use, and of what focal length in order to read it at 10 inches from his eyes.

11. Explain the manner in which a pocket lens enables us to see objects magnified.

12. Describe the Newtonian telescope.

B.A. ORDINARY EXAMINATION.

MECHANICS—HYDROSTATICS.

Examiner, ...ALEXANDER JOHNSON, LL.D.

1. Define moment of a force with respect to a point. If the directions of two forces intersect, prove that their moments with respect to any point on their resultant are equal and opposite.

(*a*) State and prove any property of a machine in equilibrium where this theorem is used.

2. A uniform bar of iron 15 inches long, weighing 12 lbs., has a weight of 10 lbs. suspended from one extremity; where must a fulcrum be placed that it may just balance upon it?

3. Explain fully why a slight hill forms a more serious obstacle to carriages on a railway than on a common road.

4. Find the space described between the third and eleventh seconds by a falling body.

5. Assuming that the velocity acquired in one second by a falling body at the equator is 32·088 ft. per second, and that the centrifugal force due

to the rotation is equal to 0·11126 ft. per second, show that if G denote the attraction of the earth *uninfluenced by rotation*

$$G = 289.4f.$$

6. Find a formula for determining the number of seconds gained or lost in a day by a pendulum, owing to a change of length.

7. A rectangular surface is immersed in a liquid, and one of its sides coincides with the level of the liquid, find the depth of the *centre of pressure*, defining this.

8. Show that the product of the volume and pressure of a given mass of gas divided by its *absolute temperature* (define this) is constant.

9. If a homogeneous body float in a liquid its whole volume will be to that of the part immersed in the inverse ratio of the specific gravities of the body and of the liquid.

10. Define the specific gravity of a gas.

11. Find the height of a mountain from the following observations:

Height of barometer at sea level	30·045
" " upper station	23·66
Temperature at sea level	77°·5 Fah.
" upper station	70·5 "

the mercury and air being supposed to have the same temperature.

12. At the top of a mountain, the barometer stands at 25 inches, what would be the effect on the action of a siphon carried to the top from the bottom?

B.A. ORDINARY EXAMINATION.

ASTRONOMY—OPTICS.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. How is the truth of Kepler's first Law shown in the case of the Earth?

a. Show how the *eccentricity* of her orbit may be calculated.

2. Define declination, right ascension, latitude and longitude of a star, and state how they are ascertained.

3. The altitude of a pole at any place is equal to the latitude of a place.

4. Investigate a method for finding the distance of the Moon from the Earth.

a. Knowing her distance how would you find her diameter in miles?

5. State and account for the relative lengths of day and night at different times of the year at (1) the equator, (2) the poles, (3) latitude 66° 32′ North.

6. Explain how the *periodic* time of Mars may be ascertained. Define his *synodic* time.

7. Why is it necessary to shift the position of the eye-piece of a telescope in order to see different objects distinctly?

a. Find the distance between the glasses of an astronomical telescope whose object-glass is 6ft focal length, and eye-glass 1 inch, used by a person of average sight, whose eye is adapted to the reception of parallel rays, the telescope being used to view an object 100 ft. distant.

8. Describe the simple microscope.

9 Define *dispersive* power of a body, and find it for water, the refractive index of the red rays being 1·33 and of the violet 1·342.

10. Define the *centre* of a lens and find it. What use is made of this point?

11. Explain and prove the formula for convex lenses

$$\frac{1}{d} - \frac{1}{D} = (\mu - 1)\left(\frac{1}{r} - \frac{1}{r'}\right)$$

12. Find the angle of a water prism $\left(\mu = \frac{4}{3}\right)$ which will produce a deviation in a ray falling nearly perpendicularly on it equal to that produced by a glass prism $\left(\mu = \frac{3}{2}\right)$ whose angle is 34.

B.A. AND THIRD YEAR.

EXPERIMENTAL PHYSICS—LIGHT AND HEAT.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. Explain the manner in which the velocity of light was found from the eclipses of one of Jupiter's satellites.

2. Define *refraction*. Describe a simple experiment with a candle and a basin of water by which it may be exhibited. State the laws of refraction and define index of refraction.

3. Account for refraction on the wave-theory of light.
What does the index of refraction signify in this theory

4. An image of a candle-flame is formed in a dark room by means of a convex lens and is received on a moveable screen:—

(*a*) Explain the mode of formation of the image.

(*b*) State the changes in the position of the screen as the candle is moved in from a long distance towards the lens.

(*c*) When will the screen become useless, and why?

(*d*) Where will the image, if any, be found in this last case?

(*e*) In what cases is the image largest?

f) Having the choice of different convex lenses, which would you choose when you wish to get the largest possible image of a given object on a screen, and why?

5. Account for the persistence of impressions on the retina, mentioning one example.

6. Describe the construction and action of a Nicol's prism.

7. Two Nicol's prisms are used as polarizer and analyser respectively with a beam of electric light:—

(*a*) Account theoretically for the case where no light is transmitted to the screen. (*b*) In this case, a uniformly thin plate of selenite is placed between them and coloured light is at once transmitted. Account for this.

8. Define briefly conduction, convection, and radiation of heat, giving one example of each.

9. Explain briefly the principle of the mercurial compensation pendulum.

10. A bright tin can filled with hot-water has a piece of flannel stretched tightly on it on one side. The covered and uncovered parts are first touched successively by the hand; secondly, tested in turn by a thermo-multiplier; state the results of the comparison of temperatures by the two methods, and account for them, as far as you are able.

11. A bath containing 16 cubic feet of water at the temperature 45° Fah. is to have its temperature raised to 90° Fah. What weight of steam at 212° will be necessary,

12. A bar of wrought iron whose section is 1 inch square has its ends fixed between two immoveable blocks and its temperature is raised 50° Fah.; find the pressure on the blocks, being given the co-efficient of expansion for 1° Fah. as .00000642, and the modulus of elasticity 29,000,000 lbs. Prove a general formula for this calculation.

13. The specific heat of lead is .031 and its latent heat 5.37. What is the mechanical equivalent of the heat necessary to raise 5 pounds of lead from a temperature 270° C. to its melting-point 335° C., and then to melt it?

B.A. ORDINARY EXAMINATION.

EXPERIMENTAL PHYSICS (*Additional*).

ELECTRICITY—SOUND.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. What is meant by the *resistance* of a conductor? On what does it depend? If the unit of resistance (the ohm) be the resistance of a column of mercury one square millimetre in section and 106 centimetres in length,

at the temperature of melting ice, what would be the resistance of a column of mercury one metre long and one square millimetre in section?

2. Describe the *tangent galvanometer* and show that the strength of the current is proportional to the tangent of the angle of deflection.

3. Explain *Wheatstone's method* for determining the *electro—motive force* of a voltaic cell.

4. Describe the *Jablochkoff candle.*

5. Describe an experiment showing the production of an electric current by heat.

6. Describe Bell's telephone, and explain its action.

7. In studying terrestrial magnetism what are the three *Magnetic elements* to be determined at any place? Define them.

8. Describe the method of charging a battery of Leyden jars by *cascade.*

9. State the laws of vibrating strings.

10. Define *nodes* and *loops*, and explain their formation in a stopped organ pipe when the fundamental note is produced.

11. Explain the manner in which sound is propagated in air. What is the leading difference between the wave motion in sound and in light?

12. State some of the results of Tyndall's experiments for fog signals.

FIRST YEAR HONOUR EXAMINATIONS.

(I) THEORY OF EQUATIONS—ALGEBRA.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. Investigate an easy method for determining the value of a function of x when a is substituted for x; and apply it to the case of a function $3x^4 - 2x^3 - 5x + 7$ when 3 is substituted for x.

2. In any rational integral function of x arranged according to descending powers of x, any term may be made to contain the sum of all which follow it, as many times as we please, by taking x large enough.

3. An equation of an *even* degree which is in its simplest form and has its *last* term *negative*, has at least two real roots of contrary signs.

4. In an equation with real co-efficients imaginary roots occur in pairs.

5. Find expressions for the sum of the squares of the roots, and the sum of the reciprocals of the roots of the equation

$$x^n + p_1 x^{n-1} + p_2 x^{n-2} + \ldots + p_{n-1} x^{n-1} + p_n$$

6. Transform the equation

$$x^3 + q\,x + r = 0$$

with another the roots of which are the squares of the differences of the roots of the given equation.

7. Solve the equation $x^6 + 1 = 0$

8. Prove the binomial theorem when the index is *fractional*. Expand $(1-x)^{-\frac{1}{2}}$.

9. Find the number of *combinations* of n different things taken r together.

10. The number of variations of n things 4 together : the number of variations of $\frac{2}{3}\,n$ things 4 together : : 13 : 2, find n.

11. A railway passenger observes that a train passes him, moving in the opposite direction in two seconds, whereas if it had been moving in the same direction with him, it would have taken 30 seconds to pass him; compare the rates of the two trains.

12. Find an expansion for log $(1 + y)$.

(II) GEOMETRY (*Ancient*).

Examiner,..... .... ALEXANDER JOHNSON, LL.D.

1. Given the bases of two triangles which have a common vertex, in magnitude and position, and the *sum* of their areas, find the locus of the common vertex, when the bases intersect.

2. Divide a polygon into any number of equal parts by straight lines drawn from a given point in one of its sides.

3. Through a given point within a circle draw, when possible, a chord of given length. When is it not possible?

4. The circumscribed circle of a triangle bisects the six straight lines which join the centres of the inscribed and of the three described circles.

5. Prove that the rectangle under the distances of the points in which the bisector of the vertical angle and the perpendicular on the base meet the base from the middle point of the base is equal to the square on half the difference of the sides.

6. If from any point a tangent be drawn to a given circle, and another circle be described with the point as centre and the tangent as radius, the two circles will cut one another orthogonally.

7. The circles circumscribing the four triangles formed by four intersecting straight lines all pass through the same point.

8. Describe a circle which shall bisect three given circumferences.

9. If circles be described passing through two given points and cutting a given circle, the chords of intersection will all pass through a fixed point on the straight line passing through the two given points, or will be parallel to this line.

10. $A E$ bisects the angle A of a triangle $A B C$ and is produced to P, so that the difference of the angles $P B C$ and $P C B$ is a maximum; show that their sum is half the angle $B A C$.

11. Find the locus of a point such that if straight lines be drawn from it cutting a given circle, the rectangle under the intercepts, between the point and the circle, shall be constant.

12. $A B$ is a common chord of two circles; draw the straight line $A C D$, meeting the two circles in C and D, so that $AC . AD$ shall be given.

(III) GEOMETRY (*Modern*).

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Given three consecutive points of an harmonic range; find the fourth point.

2. Through a given point within two given straight lines any transversal is drawn and a point taken in it, such that the reciprocal of its distance from the given point is equal to the difference of the reciprocals of the intercepts between the given point and the given lines; find the locus of the point of section.

3. The base of a triangle passes through a fixed point, the base angles move on two fixed straight lines, and the sides pass through two fixed points which lie on a straight line passing through the intersection of the two fixed lines; find the locus of the vertex.

4. If a variable tangent to a circle meet two fixed tangents, the intercept on it subtends a constant angle at the centre of the circle.

5. The straight lines joining the opposite angles of any hexagon described about a circle pass through the same point.

6. Describe a circle which shall pass through a given point, and cut orthogonally two given circles.

7. If a transversal be drawn through a centre of similitude of two circles and intersecting the two, it is cut similarly by the circles, and the radii drawn to two corresponding points are parallel.

8. If two circles touch three others, contacts being of the same kind (define this) the tangents at the extremities of the chords of contact of each of the three circles meet on that axis of similitude which is also the radical axis of the two circles.

9. The polar of the point of intersection of any two straight lines is the line which joins their poles.

10. If two circles touch three given circles, as in question 8, the pole of the axis of similitude of the three circles, which is also the radical axis of the two, with respect to any of the three circles, lies in the chord of contact of that circle.

11. Given the base and the sum of the sides of a triangle; the polar of the vertex with respect to one extremity of the base as origin always touches a fixed circle.

12. Prove that the locus of the pole of a variable tangent to a given circle with respect to its centre as origin is a concentric circle.

SECOND YEAR HONOUR EXAMINATIONS.

(I) CALCULUS.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Define the *true* value of an algebraic expression which becomes indeterminate for particular values of the variable. Investigate a method for finding it.

a. Find the value, when $x = o$, of

$$\frac{x^2 + 2\ cos\ x - 2}{x^4}.$$

2. Find the maximum and minimum values of $u = a\ cos\ x + b\ cos\ 2x$.

3. Find six terms of the development of

$$\frac{e^x}{cos\ x}$$

in ascending powers of x.

4. Derive Maclaurin's theorem from Taylor's theorem. Prove it independently also.

5. If $y = a\ cos\ (log\ x) + b\ sin\ (log\ x)$, prove that

$$x^2 \frac{d^2y}{dx^2} + x \frac{dy}{dx} + y = o.$$

6. Find the differential co-efficients of a^x, $log\ x$ and $sin\ x$.

7. Find $\frac{dy}{dx}$ when, $y = log\ (log\ x)$: $y = \frac{1 - x}{\sqrt{1 + x^2}}$; $y\ sin\ (log\ x)$.

8. Write down the integrals of $\frac{dx}{x^2 - a^2}$, $\frac{dx}{\sqrt{x^2 - a^2}}$, $\frac{dx}{\sqrt{a^2 - x^2}}$.

9. Find the following

$$\int \frac{dx}{x\ log\ x}; \int \frac{dx}{1 + x + x^2}; \int \frac{dx}{x\sqrt{x^2 - a^2}}.$$

10. Classify the methods for the reduction of the integration of functions to the fundamental formulæ, giving an example of each as an illustration of your statement.

11. Find the following

$$\int x^n \log x \, dx; \quad \int \frac{dn}{x^2 (x^2 - 1)^{\frac{1}{2}}}; \quad \int \frac{dx}{x^2 (1 + x^2)}.$$

12. What is a definite integral? Find the value of

$$\int_0^{\frac{\pi}{4}} \sin^2 x \, dx.$$

(II) TRIGONOMETRY.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Find a general formula for *all* angles whose sines are equal to $\sin \theta$.

2. Show that the trisection of an angle can be made to depend on the solution of a cubic equation.

3. The radius of the inscribed circle of any triangle is

$$\frac{\sqrt{s (s - a) (s - b) s - c}}{s}.$$

4. Prove fully that

$$\cos 5\theta = \cos^5\theta - 10 \cos^3\theta \sin^2\theta + 5 \cos\theta \sin^4\theta.$$

5. Define the *modulus* of the common system of logarithms and show that it is equal to $\frac{1}{\log_e 10}$.

6. In a spherical triangle, prove that

$$\sin a = \frac{2}{\sin B \sin C} \sqrt{-\cos C \cos (S - A) \cos (S - B) \cos (S - C)},$$

and show that though this expression is in an imaginary form it gives a real magnitude.

7. The hypothenuse of a right-angled spherical triangle is 64° 40′, and an angle is 64° 38′ 11″, find the remaining angle and the side opposite to it.

8. The angles A and B of a spherical triangle are 82° 27′ and 57° 30′ respectively; the side C is 126° 37′; find the side B.

(III) ANALYTIC GEOMETRY (*First Paper*).

Examiner,.....ALEXANDER JOHNSON, LL D.

1. Writing down the most general form of the equation of a conic prove that every right line meets the conic in two points, real, coincident or imaginary.

(*a*) Find the four points where the axes meet the conic.

(*b*) Find the equation of the conic which meets the axes in the points a, a', b, b'.

2. Explain fully what is represented by

$$\frac{x^2}{a^2} - \frac{2xy}{ab} + \frac{y^2}{b^2} - \frac{2x}{a} - \frac{2y}{b} + 1 = 0.$$

3. Prove that the polar of the origin when the conic is represented by the general equation is $gx + fy + c = 0$.

(*a*) Hence show that the polar of any point is parallel to the ordinates of the diameter passing through that point.

4. Show how to draw a tangent to a given conic section from an external point with the help of a straight ruler only.

5. Find the centre of the conic

$$3x^2 + 4xy + y^2 - 5x - 6y - 3 = 0,$$

and transform the equation to parallel axes through it as origin.

6. Show that in transforming the general equation from one system of rectangular axes to another, the quantities $a + b$ and $ab - h^2$ remain unaltered.

7. Find the co-ordinates of the extremity of the diameter conjugate to that passing through a point $x^1\ y^1$ on the hyperbola,

$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1.$$

8. If any tangent to an ellipse meet any two conjugate diameters, the rectangle under its segments is equal to the square of the parallel semi-diameter.

9. Find the equation of the hyperbola referred to the asymptotes as axes.

10. Show that in the parabola the point where any tangent cuts the axis, and its point of contact are equally distant from the focus.

11. If any line cut two similar and concentric conics, its parts intercepted between the conics will be equal.

12. Prove that the radius of curvature at any point of an ellipse is $= \frac{b'^3}{ab}$.

(IV) ANALYTIC GEOMETRY. (*Second Paper*).

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. If through a fixed point O any chord of a circle be drawn, and OQ taken an *harmonic* mean between the segments OP and OP', find the locus of Q.

2. Find the locus of the intersection of tangents at the extremities of a chord whose length is constant.

3. Find the polar equation of a circle in its most general form. Deduce hence some of the simpler forms.

4. Find the condition that $Ax+By+C=0$ should touch the circle

$$(x-a)^2+(y-b)^2=r^2$$

5. Find the conditions that the general equation of the second degree should represent a circle.

6. Show that the equation

$$x^2-pxy+qy^2=0$$

represents two right lines, and find the ang · between them.

7. Given base and ratio of sides of a triangle, find the locus of the vertex.

8. PP' and QQ' are any two parallels to the sides of a parallelogram ; find the locus of the intersection of the lines PQ and $P'Q'$.

9. Given base and sum of sides of a triangle; if the perpendicular be produced beyond the vertex until its whole length is equal to one of the sides, find the locus of the extremity of the perpendicular.

10. Find the polar equation of a right line.

11. Find the area of the triangle whose vertices are (2, 1), (3,-2), (-4,-1).

12. Find the lengths of the perpendiculars of the triangle in last question.

B.A. AND THIRD YEAR HONOURS.

(I) GEOMETRY OF THREE DIMENSIONS.

Examiner,.....REV. PRINCIPAL ADAMS, M.A.

1. Express the cosine of the angle between two straight lines in terms of the direction cosines of those lines; and give the condition that two straight lines shall be at right angles to one another.

2. Interpret the equations $\phi(xy)=0$, also $\phi(x)=0$ in solid geometry.

Find the equation to a plane determined by three points, and give the condition that four points may lie in a plane.

3. Find the equations and magnitude of the shortest distance between two non-intersecting non-parallel straight lines.

4. Write down the general equation of the second degree.

Also the form of the equation to central quadrics referred to their centres.

Find the equation to a tangent plane at an extremity of a conjugate diameter, and the locus of the intersection of three tangent planes at the extremities of three conjugate diameters.

5. Find the circular sections of a quadric surface.

Shew that circular sections of a cone are the same as those of a hyperboloid to which it is asymptotic.

6. Which of the surfaces of the second degree has rectilinear generators? Express the equation of the surface and of its generators.

Shew that any two lines belonging to opposite systems of generators lie in the same plane.

7. If $U = 0$ represents a sphere, what does $U = L\,M$ express when $L = 0$ $M = 0$ are equations to planes?

What is the focus of a quadric? Examine whether a given central quadric has a focus, and explain what is meant by a *focal conic* of the surface.

8. Two confocal surfaces cut each other everywhere at right angles.

9. Through an assumed point on a surface it is generally possible to draw two lines which shall there meet the surface in three coincident points.

10. What is a line of curvature on a surface?

If two surfaces cut at right angles, and if their intersection is a line of curvature on one, it is also a line of curvature on the other.

11. Find the equation to the osculating plane.

12. Shew how to find the radius of curvature of a curve in space.

Find radius of curvature of the helix.

13. Every curve has an infinity of evolutes lying on the Polar Developable.

14. Define and find general equation of:—cylindrical, conical and conoidal surfaces.

15. Prove that the four planes $my + nz = 0$, $nz + lx = 0$, $lx + my = 0$, $lx + my + nz = p$, form a tetrahedron whose volume is $\frac{2\,p^3}{3\,l\,m\,n}$

16. (B.A. only.) Find the general equation of ruled surfaces.

It will be sufficient if twelve questions are attempted; for the candidates for B.A. one must be number 16.

THIRD YEAR HONOURS IN MATHEMATICS.

(II) DYNAMICS.

Examiner,.....REV. PRINCIPAL ADAMS, M.A.

1. "Uniform velocity in a straight line is a sign of the absence of acting force."

Comment on this statement; could it be said of uniform velocity in a circle

Shew that uniform force acting in a straight line cannot produce uniform velocity.

How are variable velocity and acceleration measured?

2. From the equation $\frac{d^2x}{dt^2} = -g$, find three equations, free from differential coefficients, which determine the circumstances of motion of a body projected vertically upwards from the ground with velocity V; also find the time and height of ascent, and prove that the velocity at any level will be the same going up and coming down.

3. Find the expressions for tangential and normal accelerations at any point in a curve.

What is meant by the *Hodograph?* Find expressions for accelerations along and perpendicular to the radius vector of a curve.

Also for the areal acceleration of a point with regard to an origin.

4. The path described by a projectile acted on by gravity alone is a parabola.

Find its focus and directrix.

Also the range and time of flight on a plane making angle e with the horizon.

5. Give the third law of motion. Describe Atwood's machine, its principle and its uses. How can it be used to illustrate the laws of uniformly retarded motion?

6. A body is projected at an inclination a to the horizon, and by continually rebounding from the (smooth) horizontal plane describes a series of parabolas; find the tangent of the angle of projection at the nth rebound.

7. Find an expression for the vis viva lost in the direct collision of two imperfectly elastic spheres.

8. Find an expression for centrifugal acceleration and centrifugal force, explaining the terms.

State and establish Kepler's third law for circular orbits.

9. Find the time of a small oscillation in the case of the simple pendulum.

A seconds pendulum is carried to the top of a mountain, m miles high; if earth's radius $= 4000$, assuming law of gravitation, find time of small oscillation at the top.

10. What is the usual measure of kinetic energy? How is the energy due to a variable force measured?

How is the work done by an impulse measured? Give proofs where needful.

11. Write down the two differential equations for acceleration when a body moves under the action of a central attractive force.

Shew that equal areas will be described in equal times; and that the velocity at a point varies inversely as the perpendicular from the centre on the tangent at the point.

12. Investigate the motion of a body of mass m supposed to fall vertically in a resisting medium where the resistance is a function of the velocity.

THIRD YEAR HONOURS

(III) STATICS AND HYDROSTATICS.

Examiner,..... REV. PRINCIPAL ADAMS, M.A.

1. State the Parallelogram of Forces, and the Parallelogram of Velocities; deduce the former from the latter.

Given that the direction of the resultant of every two forces is that of the diagonal of their parallelogram, its magnitude must be represented by this diagonal. Prove this proposition *and its converse*.

2. Find equations of equilibrium, or analytical conditions of equilibrium, for any number of forces acting in one plane at one point.

3. Investigate the equilibrium of the Funicular Polygon.

4. Give the Laws of Friction, and discuss them; what is meant by "coefficient of friction"; how can "angle of friction" be experimentally determined?

A glass rod is balanced partly in and partly out of a cylindrical tumbler, with the lower end resting against the vertical side of the tumbler. If α and β are the greatest angles the rod can make with the vertical, prove that the angle of friction is

$$\tfrac{1}{2}\tan^{-1}\left(\frac{\sin^3\alpha - \sin^3\beta}{\sin^2\alpha\cos\alpha + \sin^2\beta\cos\beta}\right).$$

5. Find the resultant of two unequal opposite parallel forces.

Examine carefully the case in which the forces become equal.

6. What is the principle of Virtual Work; how does this principle give conditions of equilibrium?

Example: Cases of wheel and axle, and screw.

HYDROSTATICS.

7. Explain fully the equations $W = g \rho V$, $W = s V$.

If in these equations the standard substances and the units of weight, are the same and the unit of time $\left(\frac{9}{\sqrt{}}\right)$ seconds, compare the units of length.

8. Suppose a mass of fluid, elastic or non-elastic, homogeneous or heterogeneous, to be at rest under the action of given forces, it is required to determine the conditions of equilibrium and the pressure at any point.

9. What are meant by "surfaces of equal pressure" and "curves of equal pressure and density." Give equations and examples.

10. Prove that whole pressure of a fluid on a surface in contact with it is equal weight of a cylindrical column of fluid, the height of which is the depth of the centre of gravity of the surface and the base a plane area equal to the area of the surface.

Find the whole pressure on a hemispherical bowl full of water.

11. Obtain general formulæ for *centre of pressure* of any plane area.

Find, without using integral calculus, the centre of pressure of a parallelogram with one side in the surface, and of a triangle with one side in the surface.

12. A homogeneous liquid mass, the particles of which attract each other with a force varying as the distance, rotates uniformly about an axis through its centre of gravity ; required to determine the form of the free surface.

B. A. HONOUR EXAMINATION.

(II) PLANETARY THEORY—NEWTON'S PRINCIPIA.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. State the points of resemblance in the Lunar and Planetary Theories, and also those of difference. Prove the principle of superposition of small motions, and explain its application.

2. Define the *disturbing function*, and prove that it is independent of any particular system of co-ordinates.

3. Prove $\frac{dR}{de} = -a \cos\left(\theta_0 - \varpi_0\right) \frac{dR}{dr} + a\left(\frac{\mu}{n^2} + 1\right) \sin\left(\theta_0 - \varpi_0\right) \frac{dR}{\omega}$

4. Investigate the formula for calculating the longitude of the node,

$$\frac{d\Omega}{dt} = \frac{n\,a}{\mu\sqrt{1-e^2}\,\sin i}\,\frac{dR}{di}$$

5. Show that the principal parts of the co-efficient of a term in R of the form $P\cos\left\{(p\,n+q\,n')\,t+Q\right\}$ is of the order $p+q$.

6. Prove the stability of the inclinations of the planes of the planetary orbits, assuming $\frac{di}{dt} = \frac{m'\,n\,a^2\,a}{4\,\mu}\,D_1 \tan i'\,\sin\left(\Omega-\Omega'\right)$

7. Find the condition which determines whether the perihelion will oscillate or move constantly in one direction, assuming

$$\tan\varpi = \frac{M_1\,\sin(g_1\,t+\gamma_1)+M_2\,\sin(g_2\,t+\gamma_2)}{M_1\,\cos(g_1\,t+\gamma 1)+M_2\cos(g_2\,t+\gamma_2)}$$

8. Define "long inequalities." Explain any rule for selecting terms in R which will produce the principal long inequalities.

9. Give a geometrical construction for determining the disturbing force of the sun on the moon, and prove its truth. When is the disturbing force altogether radial? When altogether tangential?

10. From the construction in question 9 prove

$$P = \frac{\mu}{r^2}\left(1-\tfrac{3}{2}\,s^2\right) - \frac{m'\,r}{2\,r'^3}\left\{1+3\cos 2\left(\theta-\theta'\right)\right\}$$

11. If the orbit of the moon be supposed nearly circular consider the effects of the central disturbing force on the motion of its apsides, during a whole revolution.

12. Prove that the periodic time in an ellipse round the focus as a centre of force varies in the sesquiplicate ratio of the major axis.

13. If a body be acted on by a central force, the space through which it should descend from rest by the action of the force, at any point P, continued constant, in order to acquire the velocity at P, is $\frac{1}{4}$th of the chord of curvature through the centre of force.

(III) EXPERIMENTAL PHYSICS—WAVE-THEORY OF LIGHT.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. If in Fresnel's experiment on interference the distances of the luminous origin and of the screen from the intersection of the mirrors be a, and b respectively; and the angle of inclination of the mirrors be ε prove that the distance of the bright band of the nth order from the central band is expressed by the formula

$$\frac{(a+b)\,n\lambda}{2a\,\sin\varepsilon}$$

2. Describe Arago's *experimentum crucis*, to determine between the emission and wave theories of light.

3. Stating briefly Newton's theoretical explanation of the diffraction phenomena produced by a *single edge* or two *near edges*, describe how it has been refuted, taking into account, the *mass*, *nature* and *form* of the inflecting body.

4. Describe Young's method for comparing the diameters of small particles by means of his *eriometer*.

5. When a beam of light polarized by reflexion falls upon a second reflecting surface at the polarizing angle, state the law of Malus for the variation of the intensity of the twice reflected beam, and hence show that a ray of common light may be conceived as composed of two polarized rays of equal intensity, whose planes of polarization are perpendicular.

6. Newton made an objection to the wave-theory of light founded on the phenomena of polarization; state it, and explain how it is met.

7. Describe Sir William Hamilton's discovery of external conical refraction with Lloyd's experimental verification.

8. State and account for the phenomena of rotatory polarization in rock-crystal.

(IV) THEORY OF THE POTENTIAL—ELECTRICITY.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Define Potential, and prove that if V, the potential of a mass M at a point P, be expressed as a function of s (where ds is the element of the arc of any curve at P) and quantities which do not vary with s, then the attraction of M on the unit of mass at P, along the tangent to this curve is expressed by $\frac{dV}{ds}$.

2. Prove that the change of attraction in passing through an attracting shell of small thickness is equal to $4\pi kp$ where k and p are the thickness and density of the shell.

3. Find by *direct calculation* the attraction of a uniform bar AB on a particle P.

a. If a circular arc of uniform thickness and density (equal to those of the bar) is described with P as centre, touching the bar at O and terminated by the lines PA and PB, the attraction of this arc at P is the same in magnitude and direction as the attraction of the bar at P.

4. Given the mass of a solid, find its shape so that its attraction on a particle placed at a given point may be a maximum.

5. The gravitation potential of an attracting mass cannot have a maximum or minimum value in empty space.

6. Investigate the component of the attraction of a solid homogeneous ellipsoid on a unit of mass placed at an external point P; viz.

$$X = 3\,M\,x \int_{\infty}^{\lambda_1} \frac{\lambda\, d\,\lambda}{\sqrt{(a^2+\lambda^2)^3\ (b^2+\lambda^2)\ (c^2+\lambda^2)}}$$

7. Show that the work done by the electric forces in the discharge of a Leyden jar is

$$\frac{2\pi h\ Q^2}{S}$$

where S is the surface of the plate, Q the quantity of the electricity on it, and h the distance between the two plates.

8. Assuming Green's equation show that if any mass contained within one of its level surfaces be distributed over this surface so as to produce the same effect as the given mass at all points outside the level surface it produces constant potential at all points inside the surface.

9. A spherical soap-bubble is electrified in such a manner that it is just in equilibrium when the pressures of the external and internal air are equal. Calculate the surface-tension in terms of the potential.

10. Explain Sir Wm. Thomson's method of electric images and apply it to calculate the electric state of two spheres whose radii are a and b respectively, the distance of their centres being c (b being supposed small compared with c), and the potentials being P and P'.

11. State and examine Kirchoff's laws concerning the current in each branch of any net-work of linear conductors.

12. Explain a method for measuring the potential of a conductor without touching it.

(V) DYNAMICS OF A RIGID BODY.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Write down from D'Alembert's Principle the equations of motion of a rigid body, and prove thence that the motion of a free system relative to its centre of inertia is the same as if this point were fixed in space, the applied forces being absolutely unaltered in any respect.

2. Assuming Euler's equations for the motion of a body having a fixed point, show that the axis of the centrifugal couple is at right angles to the axis of principal moments and to the axis of rotation.

3. The moment of momentum of a system round an axis through any point O is equal to the moment of momentum round a parallel axis through the centre of inertia, together with the moment of momentum relative to O of the entire mass of the system supposed to be concentrated at the centre of inertia, and moving with it.

4. A satellite of mass m is moving in a circle whose radius is r, round a planet, whose mass is M, which rotates round an axis at right angles to the plane of the orbit with an angular velocity of n. If C be the moment of inertia of the planet and μ the attraction between unit masses at the unit of distance, show that the moment of momentum of the system round its centre of inertia is

$$C\left\{ n + \mu^{\frac{1}{2}} \frac{Mm}{C} (M+m)^{-\frac{1}{2}} r^{\frac{1}{2}} \right\}$$

5. Prove that the total energy, kinetic and potential, of the planet and satellite in the last example is

$$\frac{C}{2}\left\{ n^2 - \mu \frac{Mm}{C} r^{-1} \right\} + K$$

where K is an undetermined constant.

6. A free body is set in motion by an impulse. If the initial motion be a pure rotation, show that the directions of the impulse and instantaneous axis of rotation are principal axes of a section of the momental ellipsoid relative to the centre of inertia.

7. A body is moving round a fixed point; find the locus of the instantaneous axis of rotation in the body.

8. A rigid body receives a motion of translation, whose components, parallel to the axes, are a, b, c, and a rotation θ round an axis fixed in the body, which at the beginning of the motion coincides with the axis of Z. Determine the position and pitch of the screw, a twist round which would bring the body into the same position; and find the amplitude of the twist.

9. A semi-circular wire of radius a, lying on a smooth horizontal table, turns round one extremity A, with a constant angular velocity ω. Find the tendency to break at any point B.

10. A homogeneous cylinder, having its axis horizontal, rolls without slipping down a rough inclined plane; neglecting the couple of rolling friction, determine the amount of friction brought into play.

11. To the ends of a thin light piece of wood are fastened spheres of lead whose weights are P and P'. The piece of wood turns on a horizontal axis through its middle point. Its length being $2l$, and its mass negligible determine the time of a small oscillation, the spheres being so small that the squares of their radii are negligible as compared with l.

12. In Peancellier's arrangement for transforming circular into rectilinear motion, find the relation between the velocity of the point describing the straight line and that of one of the adjacent corners of the parallelogram.

(VI.) MECHANICS (*General paper*).

Examiner,..... .....ALEXANDER JOHNSON, LL.D.

1. State the general problem for the motion of a fluid, and find the equations of motion.

2. Find the equation of continuity.

3. Find the differential equation of the bounding surface of the fluid.

4. A hollow cone having its axis vertical, is filled with water; find the time in which it will be emptied through a small aperture at its vertex.

5. A vase having an horizontal aperture in its base, contains liquid, which is allowed to flow out through the orifice, determine the motion.

6. Find the *general equations* for the vibrations of an elastic fluid.

7. Investigate a method for determining the notes which can be produced from a tube closed at one end.

8. Investigate the *longitudinal* vibrations of rods.

9. Find a vertical curve such that the time of describing any arc, measured from a fixed point, under the action of gravity, shall be equal to that of describing the chord of the arc.

10. If a central orbit be made to move in its own plane with an angular velocity proportional at each instant to that of the radius vector in the orbit prove *analytically*, 1° that the new orbit is also a central orbit; 2°, that the difference between the forces in the two orbits varies inversely as the cube of the distance from the centre of force.

11. If when the earth is at an end of the minor axis of its elliptic orbit, a meteor were to fall into the Sun whose mass is the m th part of that of the Sun; find the resulting change in the Earth's mean distance, and also in the length of the year.

12. Apply the principle of work to the investigation of the loss of kinetic energy in the collision of imperfectly elastic bodies, in terms of their moduli of elasticity.

(VII.) CALCULUS.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Find by the symbolical method the solution of the equation

$$\frac{d^2 u}{d x^2} + n^2 u = X.$$

2. Find a symbolical solution of the equation

$$\frac{d^2 u}{d x^2} + \frac{d^2 u}{d y^2} + \frac{d^2 u}{d z^2} = 0.$$

3. Find to what condition u and v must be subject in order that $u = f(v)$ may be a first integral of an equation of the form $Rr + Ss + Tt = V$.

4. Integrate by Monge's method

$$q^2r - 2pqs + p^2t = 0.$$

5. Integrate the equation of conical surfaces

$$(a - x)p + (b - y)q = c - z$$

6. Find the equation of the surface which cuts at right angles all the spheres which pass through the origin of co-ordinates and have their centres in the axis of x.

7. Show that the solution of the simultaneous equations

$$Pdx + Qdy + Rdz = 0$$
$$P'dx + Q'dy + R'dz = 0$$

can always be made to depend upon that of an ordinary differential equation of the second order between two of the primitive variables, and that it always consists of two equations involving two arbitrary constants.

a Find the complete solution of the equations

$$(5y + 9z)\,dx + dy + dz = 0$$
$$(4y + 3z)\,dx + 2\,dy - dz = 0$$

8. Show that the equation $Pdx + Qdy + Rdz = 0$ can, when there exists a single complete primitive, be integrated by means of a factor.

9. Find a curve in which the area as expressed by the formula $\int y\,dx$, is in a constant ratio to the corresponding arc.

10. Find the complete primitive of the equation

$$n x^3 \frac{d^2 y}{d x^2} = \left(y - x\frac{d y}{d x}\right)^2$$

11. Find the solutions of the equations

(*a*) $$\frac{d^4 y}{d x^4} + 2n^2 \frac{d^2 y}{d x^2} + n^4 y = 0;$$

(*b*) $y = p^2 + 2p^3$, where $p = \dfrac{d y}{d x}$.

12. Find by means of an integrating factor, the solution of the linear differential equation of the first order

$$\frac{d y}{d x} + Py - Q = 0.$$

13. If V and v are any functions of x and z, the expression Vdv will be an exact differential, only when V is expressible as a function of v alone, involving x and z only through its involving v.

14. Integrate the differential equation :

$$(y^2 + x y^2)\,d x + (x^2 - y x^2)\,d y = 0.$$

15. Eliminate the arbitrary functions from the equation

$$z = \frac{x^3 y}{6} + \phi(y + a x) + \psi(y - a x).$$

16. Transform the equation

$$x^2 \frac{d^2 y}{d x^2} + 2 x \frac{d y}{d x} + \frac{a^2}{x^2} y = 0,$$

into another where z is the independent variable, being given that $x = \frac{1}{z}$.

Show that the result is $\frac{d^2 y}{d z^2} + a^2 y = 0$.

ENGLISH LANGUAGE AND LITERATURE.

ENGLISH LITERATURE AND ANALYSIS.

FIRST YEAR.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Add to the name of each of the following writers the title of one of his works: Boiardo, Guillaume de Lorris, Camoëns, Alexander Barclay.

2. Explain alliteration, and also what is meant by the statement that Béowulf consists of more than six thousand "short lines." How do you account for the appearance of Christian sentiments in Béowulf?

3. Give the dates of the following events: the death of Columba; the arrival of Augustine in Kent; the birth of Dante; the birth of Chaucer; the capture of Constantinople by the Turks; the death of Spenser.

4. On what evidence are the Canterbury Tales grouped? How are the groups designated? In what dialect are the Canterbury Tales written? Mention some characteristic marks of that dialect.

5. For what class in especial were Sir John Mandeville's Travels written? Give a reason for not considering them trustworthy. When did the work first appear in English?

6. Who wrote the Bowge of Court? Tell what you know about it. Name other works by the same author.

7. What works of the following writers were mentioned in the lectures—John Lydgate; Anthony Woodville; Lord Rivers; Sir John Fortescue; John Heywood?

8. When was the Masque introduced into England? Give an account of the first Masque. Show in what way Milton's Comus displays the characteristics of a Masque.

9. Who wrote Utopia? Who tells the story of Utopia, and where? What do you know about him? In describing Utopia what was said concerning the surplus produce of the land, diamonds and war?

10. Tell what you know about Ralph Roister Doister and its author.

11. What do Orgoglio, Corceca, Kirkrapine, Una, and Sir Satyrane represent in the allegory of the Faerie Queene? Why did Spenser choose Arthur as a hero? Name the virtues of the several books of the Faerie Queene.

12. Analyse grammatically:—

(*a*) The sea is as deep as the mountains are high.
(*b*) He is more industrious than clever.
(*c*) I saw from out the wave her structures rise
As from the stroke of the enchanter's wand;
A thousand years their cloudy wings expand
Around me, and a dying Glory smiles
O'er the far times, when many a subject land
Look'd to the winged Lion's marble piles,
Where Venice sat in state, throned on her hundred isles!

[First mention the kind of sentence. Then analyse the sentence, placing over each clause, phrase, or word, the number of the column in the usual scheme in which it should be placed. Then treat the clauses in the same way as the sentences.]

INTERMEDIATE EXAMINATION.

BRITISH HISTORY.

Examiner,.....CHAS. E. MOYSE, B.A.

1. When, between whom, and with what result, were the following battles fought: Bouvines, Otterbourne, Agincourt, Sedgmoor, Sheriffmuir?

2. Mention the object of the Test Act, the Act of Settlement, the Exclusion Bill. Refer each to its reign.

3. Mention briefly, but definitely, a noteworthy event in connection with Cranmer, Warren Hastings, the Earl of Strafford, Prince Rupert, Simon de Montfort, the Earl of Essex (1601).

4. Give a genealogical table of the Plantagenet Kings from Henry II to Henry VI.

5. Take the kings of the previous answer and over against each mention an important event of his reign.

Repetition of previous matter will not obtain credit.

INTERMEDIATE EXAMINATION.

ENGLISH LITERATURE.

Shakespeare :—*Tempest.*

Examiner,..... .....CHAS. E. MOYSE, B.A.

1. Comment on the italicized words in,
   (*a*) What *cares* these roarers for the name of king ?
   (*b*) Stand *fast*, good Fate, to his hanging.
   (*c*) But blessedly *holp* hither.
   Explain :
   would thou mightst lie drowning
   The washing of ten tides.

2. Give four examples of words used literally in the Tempest, but now used metaphorically. Say where each occurs. Give two examples showing the easy interchange of the parts of speech in Elizabethan English. Say where each occurs.

3. Explain what is meant by Amphibious Section, and scan :
   (*a*) To think o' the teen that I have turned you to
   (*b*) Of officer and office, set all hearts i' the state
   (*c*) And him he played it for, he needs will be
   (*d*) He thinks me now incapable ; confederates

4. In what connection do the following extracts occur?
   ... .Our little life
   (*a*) Is rounded with a sleep.
   (*b*) Letters should not be known.
   (*c*) .... lest too light winning
   Make the prize light.
   (*d*) His word is more than the miraculous harp.
   (*e*) This ancient morsel, this Sir Prudence—
   (*f*) Misery acquaints a man with strange bed-fellows.
   (*g*) I swam, ere I could recover the shore, five and thirty leagues off and on.
   (*h*) .....the isle is full of noises
   Sounds and sweet airs—
   (*i*) You are three men of sin—
   (*j*) O, rejoice
   Beyond a common joy, and set it down
   With gold on lasting pillars.
   (*k*) He receives comfort like cold porridge.
   Make a note on (*b*) and (*d*).

5. Quote two striking passages in the play. (Each need not exceed eight lines.)

6. Trace Ariel through the play.

7. Give the substance of the dialogue between Ferdinand, Prospero and Miranda when they are first brought together.

8. State, without detail, differences, apart from plot, between the Tempest and Love's Labour's Lost.

INTERMEDIATE EXAMINATION.

ENGLISH LITERATURE.

Examiner, ... CHAS. E. MOYSE, B.A.

1. On what grounds did John Knox maintain that woman ought not to exercise political rule? Show that the outlook of Protestantism was a gloomy one just before the accession of Elizabeth.

2. What is the date of the first edition of Bacon's Essays? How many Essays did it contain? Give the etymology of the word *essay*, and show that it throws light on Bacon's Essays.

3. When was the Novum Organum published? Explain the title. What does Bacon understand by "idols?" Into what classes does he divide idols? What was the year of Bacon's fall?

4. State Dryden's views concerning (*a*) the novelty of the dramatic couplet, (*b*) Shakspeare's use of blank verse. What contemporary writers does he praise for their skill in rime?
When did the Essay of Dramatic Poesie appear?

5. To what party did Hudibras belong? What person may Butler have intended to caricature? Sketch the appearance of Hudibras. Who were Crowdero, Sidrophel and Orsin?

6. Give an outline of Pope's life prior to his publishing the Essay on Criticism. Notice some one (but only one) leading feature of the Essay.

7. Name Ben Jonson's tragedies and two of Wycherley's plays. Give a brief account of one of the latter.

8. What is meant by innate ideas? Give Locke's view concerning them. In what work are those views found, and when was that work completed?

9. Who wrote the Dispensary? What caused it to be written?

10. Show in Tabular form the influence of Earlier and Later Euphuism on European literature.

11. What was Defoe's method of extinguishing Dissent? In what year did he stand in the pillory?

12. Give an account of the controversy between Boyle and Bentley.

INTERMEDIATE EXAMINATION

ENGLISH LITERATURE.

SPALDING:—ELIZABETHAN AND STUART PERIODS.

Examiner,.....CHAS. E. MOYSE, B.A.

1. How does Spalding show that the quarter of a century following 1558 was very unproductive in all departments of literature?

2. Tell what you know about the Geneva and the Bishops' Bibles.

3. Who wrote Areopagitica? What is its theme?

4. Mention some of Jeremy Taylor's writings, and notice his style.

5. Mention works of the period 1558-1660 which deal with the Theory of Society and Civil Polity:

6. Who is the hero of the Faerie Queene? How many books of the poem are extant? Indicate the general course of the tale of the First book.

7. Mention translations by Chapman, Harrington, Fairfax and Sandys.

8. Indicate the nature of the poems of Dryden which Spalding mentions.

9. Explain what is meant by the Three Unities. How did the Elizabethans regard them? Who is the most famous writer of Heroic Plays?

10. Group the following writers under the heads Drama, History, Essay, arranging the names of each group chronologically, and mentioning the work which entitles each writer to stand where you place him: Knolles, Clarendon, Cowley, Milton, Otway, Locke, Selden, Marlowe, Raleigh, Massinger.

THIRD YEAR.

RHETORIC AND ENGLISH LITERATURE.

Examiners,..... { J. CLARK MURRAY, LL.D.
CHAS. E. MOYSE, B.A.

(Write the answers to *A* and *B* on separate bundles of paper.)

(A) RHETORIC.

1. (*a*) Why is Perspicuity the essential excellence of a good style? (*b*) Show that vigour, elegance and simplicity contribute to this.

2. Explain why vigour is imparted by selecting (*a*) Saxon, (*b*) special, (*c*) concrete, expressions.

3. Improve the following sentences:

(*a*) He parted with the greater part of his library.

(*b*) If you compare James and John, you may see at once that he is taller.

(*c*) If the balance of the class had studied like the prizemen did, they would have succeeded equally as well.

(*d*) It is absurd to judge his poetry by rules which no writer attends to.

4. Explain the classification of Compositions given in the lectures.

5. Write a full note on any two of the following subjects: (*a*) External Description; (*b*) History; (*c*) Exposition; (*d*) Exhortation; (*e*) Materials of Poetry.

(B) ENGLISH LITERATURE.

1. Say to whom each of the following lines refers:

(*a*) And of his port as meke as is a mayde
(*b*) He was as fressh as is the *moneth* of May
(*c*) Uppon his heed a Flaundrisch bevere hat
(*d*) An houshaldere, and that a gret, was he
(*e*) Wel *cowde* he knowe a drau*ghte* of Londone ale
(*f*) He hadde of gold *y-wrought* a curious pynne
(*g*) A Christofre on his brest of silver schene
(*h*) Ful wel sche sang the servise divine
(*i*) The hoote somer hadde maad his hew al broun
(*j*) He was not pale as a *for-pyned* goost
(*k*) Not oo word spak he more than was neede
(*l*) His typet was ay *farsed* ful of knyfes
(*m*) A fewe termes hadde he, tuo or thre
(*n*) A large man he was with *eyghen stepe*
(*o*) A whit cote and a blewe hood werede he

2. Scan the lines of the previous question, and make a few notes on the pronunciation of Chaucer's English.

3. Make notes on the italicized words of question 1.

4. Comment on chapel, lazar, vitaille, assise, Bologna, shamfastnesse.

5. What do you know about Galen, Constantyn, and Gatesden?

6. Why was the Assembly of Foules written? Give some account of it

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B.A. ORDINARY EXAMINATION.

EUROPEAN HISTORY:—*Lectures.* BRYCE:—*Holy Roman Empire.*

Examiner,..... ....CHAS. E. MOYSE, B.A.

[Not more than twelve questions are to be answered, namely, those of group A and any four of group B.]

A. 1. Indicate on the accompanying map the extent of the Roman Empire in the time of Justinian.

2. Give the date of the Hegira. State the course and the extent of the Saracen conquests in the Seventh and Eighth centuries.

3. What sovereigns took part in the Crusades, and in what Crusades did they take part?

4. Examine the attitude of Frederick Barbarossa, Frederick II and Charles V towards the Papacy.

5. Notice the attempts made by the Roman people to throw off the yoke of the Papacy during the Middle Ages.

6. Mention the Caliphates and mark their centres on the map.

7. Give some account of the settlement of the Normans in Italy.

8. Mark on the map the centres from which Russia grew.

B. 1. What possessions in France came to Henry II through his wife and his father?

2. Give the leading divisions of the Hundred Years' War, and mention some of the provisions of the Treaty of Bretigny.

3. Give an account of the settlement of the Northmen in France.

4. What was the Donation of Pippin?

5. Assign events to the following dates: A.D. 489, 687, 962, 1084, 1453.

6. Trace the descent of Karl the Great.

7. Sketch the rise of Poland.

THIRD YEAR ADDITIONAL AND HONOUR EXAMINATIONS.

BURKE:—*Thoughts on Present Discontents; Reflections.*

LESLIE STEPHEN:—*English Thought in the Eighteenth Century*, Vol. II. Chap. X., Sec. V.-X.

Examiner,..... CHAS. E. MOYSE, B.A.

1. (*a*) In what publication did "the first dawning of the new system" appear, and who was its author?

(*b*) What was the policy of the Cabal towards its enemies?

(*c*) What are the two principles upon which Limited Monarchy rests?

(*d*) Although her magistrates were not elected by the people, yet Great Britain enjoyed the benefits of such election. How?

(*e*) What was the aspect of foreign politics under the new system?

(*f*) In what matters has a king an individual interest? State briefly how they were affected by the new system.

(*g*) What symptoms show a Parliament to be corrupt?

(*h*) What had been the method of obtaining a supply for discharging the debts of the Civil List? What was the new method?

(*i*) How does Burke use the sentiment *idem sentire de republica*, and what does he think of the Whigs of the time of Queen Anne?

(*j*) Comment on the following extracts: reputation, the most precious possession of any individual; talking all prose all their lives without knowing anything of the matter; Mettre le Roy hors de page; Harringtons Political Club; Janissaries; the conquest of Corsica; a Titus or a Mævius.

2. (*a*) How does the English House of Commons compare with the Tiers Etat?

(*b*) What was the attitude of the Monied Interest?

(*c*) What was the attitude of the Men of Letters?

(*d*) What arguments does Burke put into the mouths of the French peasantry?

(*e*) "They dealt at the Restoration perhaps too hardly with this poor good man?" What do you know about him?

(*f*) What change was made in the appointment of the French clergy?

(*g*) What were the bases of Representation?

(*h*) What was the gradation of election to the National Assembly?

(*i*) Why was the value of the French paper currency, as compared to the English, fictitious?

(*j*) How does Burke view Henry VIII?

(*k*) Comment on the following:—Mess-Johns; one of the great bad men of the old stamp; Lord George Gordon, fast in Newgate; the Encyclopedia; facies Hippocratica.

3. How did the following writers regard England? John Brown; Delolme.

(*b*) What does Leslie Stephen think of Burke's moral nature and of his stand on the Revolution question?

(*c*) How did Godwin treat family affection?

(*e*) To what English writer were Rousseau's doctrines "probably derived to some extent?" State some of the more important of them, *or* indicate the general character of Godwin's *Political Justice*.

THIRD YEAR HONOURS.

DRYDEN:—*Annus Mirabilis; Absalom and Achitophel*, Part I.; *Preface to "Fables."*

Examiner,.....CHAS. E. MOYSE, B.A.

1. "I have called my poem historical, not epic" ..... "I have chosen to write my poem in quatrains." What are Dryden's reasons for doing so?

2. In what connection does Dryden speak of Spain, the Second Punic War, Sweden, Solomon, Cæsar, the Elean plains, the Irish kern, Simois, London Bridge, Varro, Joshua, the Ark?

3. (*a*) Describe the Loyal London.

(*b*) In what strain does Dryden allude to the Royal Society?

4. Notice Dryden's picture of London restored.

5. What events led Dryden to write Absalom and Achitophel? Did the poem succeed in its object?

6. How has Dryden tempered his sketch of Achitophel?

7. What is the tenor of Absalom's reply to Achitophel?

8. Who was Barzillai? Give Dryden's sketch of his character.

8. In what connection do the following lines occur:

Plots true or false are necessary things
Drawn from the mouldy rolls of Noah's ark
Chaste were his cellars
His tribe were God Almighty's gentlemen
'Tis easy conduct when exchequers flow
Good heavens, how faction can a patriot paint!

Give the contexts.

10. How does Dryden defend Chaucer's inveighing against the clergy?

11. In what respects does Dryden prefer Chaucer to Ovid?

THIRD YEAR HONOURS.

ANGLO-SAXON.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Translate the extracts on the accompanying paper.

2. (*a*) Make a note on the locality of the battle of Maldon, and the disposition of the forces.

(*b*) A (1) line 3. The reading according to Hearne is "handu*m* *and* thige godu*m*." Explain "according to Hearne."

3. Grammatical questions:—(1) On A. Parse hyssa and hwæne; decline hors and thu, sing and dual; gegangan, instance a parallel force of ge. (2) On B. Decline twegen and stowum; conjugate sy and the past tense of benimth; distinguish between frith and grith; give the exact meaning of tun, and the etymology of cyrcan.

4. Define umlaut and give the i-umlaut of á, ó, ea, and éa. Explain and instance the palatal umlaut. What change does (*a*) a labial, (*b*) a guttural, and (*c*) a dental undergo before t?

5. Translate syxa sum; to his gyftum gelathod; dréorige mid wope; gecneordlice leornian; mid hluddre stemne. Give the exact meaning of dréorige, andwyrde, fullode, thwyrnysse.

6. Give the principal parts of the strong verbs and also the sing. and pl. forms of the præterito-præsentia verbs of the extracts under B.

7. Decline halig. Give the Saxon for 100 and 120, and explain the forms.

(Extracts for translation.)

(A) 1. Hét tha hyssa hwæne hors forlætan,
feorr afysan, and forth gangan,
hicgan to handum, and hige godum.

2. "Gehyrst thu, sælida, hwæt this folc segeth?
hi willath éow to gafole garas syllan,
ættrene ord and ealde swurd,
tha heregeatu the éow æt hilde ne déah.

3. "To héanlic mé thinceth
thæt gé mid urum sceattum to scype gangon
unbefohtene, nu gé thus feorr hider
on urne eard inn becomon;
ne sceole gé swa softe sinc gegangan:
us sceal ord and ecg ær geséman,
grimm guthplega, ær wé gafol syllon."

B). 1. Tha cirdon hie up inn on tha éa, for thæm hie ne dorston forth bi thære éa siglan for unfrithe; for thæm thæt land wæs eall gebun on othre healfe thære éas.

2. Se byrdesta sceall gyldan fiftyne mearthes fell, and fif hranes, and an beren fell, and tyn ambra fethra, and berenne kyrtel oththe yterenne, and twegen sciprapas; ægther sy syxtig elna lang, other sy of hwæles hyde geworht, other of sioles. 3. Eall thæt his man ather oththe ettan oththe erian mæg, thæt lith with tha sæ; and thæt is théah on sumum stowum swythe cludig; and licgath wilde moras with éastan and with uppon emnlange thæm bynum lande.

4. Thonne cymeth Ilfing éastan in Estmere of thæm mere, the Truso standeth in stæthe; and cumath ut samod in Estmere, Ilfing éastan of Estlande, and Wisle suthan of Winodlande. And thonne benimth Wisle Ilfing hire naman, and ligeth of thæm mere west and north on sæ; for thy hit man hætt Wislemutha.

5. Alecgath hit thonne forhwæga on anre mile thone mæstan dæl fram thæm tune, thonne otherne, thonne thæne thriddan, oth the hyt eall aléd bith on thære anre mile; and sceall béon se læsta dæl nyhst thæm tune the se déada mann on lith.

(C) 1. He wæs Cristes moddrian sunu, and hé hine lufode synderlice; na swa micclum for thære mæglican sibbe swa for thære clænnysse his ansundan mægthhades.

2. Witodlice thisum léofan leorningcnihte befæste se Hælend his modor, tha tha hé on rodehengene manncynn alysde, thæt his clæne lif thæs clænan mædenes Marian gymde; and héo tha on hyre swyster suna thénungum wunode.

3. Tha wearth Nerva, swithe arfæst mann, to casere gecoren. Be his gethafunge gecyrde se apostol ongéan mid micclum wurthmynte, sé the mid hospe to wræcsithe asend wæs. Him urnon ongéan weras and wif fægnigende and cwethende : " Gebletsod is sé the com on Godes naman.

4. " Nimath this gold and thas gymmstanas and farath and bicgath éow landare ; for than the gé forluron tha heofenlican spéda. Bicgath éow pællene cyrtlas thæt gé to lytelre hwile scinon swa swa rose, thæt gé hrædlice forweornion. Béoth blowende and welige hwilwendlice, thæt gé écelice wædlion. Hwæt la, ne mæg se Ælmihtiga Wealdend thurhtéon thæt hé do his théowon rice for worulde, genihtsume on welan, and unwithmetenlice scinan ? Ac hé sette gecamp geléaffullum sawlum, thæt hi gelyfon to geagenne tha écan welan, and tha the for his naman tha hwilwendan spéda forhogiath.

5. Hé carath dæges and nihtes thæt his feoh gehealden sy : hé gymth grædelice his teolunge, his gafoles, his gebytla hé berypth tha wanspédigan, hé fulgæth his lustum and his plegan ; thonne færlice gewitt hé of thissere worulde, nacod and forscyldigod, synna ana mid him ferigende ; for than the hé sceal éce wite throwian.

6. " Gath ealle endemes to Godes cyrcan, and clypiath ealle to éowerum godum, thæt séo cyrce afealle thurh heora mihte ; thonne buge ic to éowerumhæ thenscipe. Gif thonne éower godes miht tha halgan cyrcan towurpan ne mæg, ic towurpe éower tempel thurh thæs Ælmihtigan Godes mihte, and ic tocwyse éower déofolgyld ; and bith thonne rihtlic gethuht thæt gé geswycon éoweres gedwyldes, and gelyfon on thone sothan God, sé the ana is Ælmihtig.

7. Se apostol micclum blissode on tham behate, and on tham sunnanuhtan ærwacol to thære cyrcan com, and tham folce, fram hancrede oth undern, Godes gerihta lærde, and him mæssan gesang, and cwæth thæt se Hælend hine on tham dæge to heofonum gelathod hæfde. Hét tha delfan his byrgene with thæt weofod, ad thæt gréot ut awegan. And hé éode cucu and gesund into his byrgene, and astrehtum handum to Gode clypode : " Drihten Crist, ic thancige thé thæt thu mé gelathodest to thinum wistum : thu wast thæt ic mid ea lre heortan thé gewilnode.

(At sight.)

(D) From Alfred's Orosius.

1. Æfter thæm the he hie oferwunnen hæfde, he for on Bretanie thæt iglond, and with tha Brettas gefeaht, and gefliemed wearth on thæm londe the mon hæt Centlond. Rathe thæs he gefeaht eft with tha Brettas on Centlonde, and hie wurdon gefliemede. Heora thridde gefeoht wæs neah thære ie the mon hæt Temes, neh thæm forda the mon hæt Welengaford. Æfter thæm gefeohte him eode on hond se cyning and tha burgware the wæron on Cirenceastre, and siththan ealle the on thæm iglonde wæron.

2. Scortlice ic hæbbe nu gesæd ymb tha thrie dælas ealles thises middangeardes ; ac ic wille nu, swa ic ær gehet, thara threora landrica gemære gereccan hu hie mid hiera wætrum tolicgeath.

3. Nu wille we ymbe Affrica (secgan) hu tha landgemæro tolicgath. Ure yldran cwædon thæt hio wære se thridda dæl thyses middangeardes: næs na for tham the thæs landes swa fela wære, ac for tham the se Wendelsæ hit hæfth swa todæled, for than the he brycth swithor on thone suthdæl thonne he do on thone northdæl; and sio hæte hæfth genumen thæs suthdæles mare thonne se cyle thæs northdæles hæbbe, for thon the ælc wiht mæg bet wyth cyle thonne hæte. For tham thingon is Affrica ægther ge on landum ge on mannum læsse thonne Europe.

THIRD YEAR ADDITIONAL AND HONOURS.

MILTON:—*Shorter Poems; Areopagitica.*

Examiner,.....CHAS. E. MOYSE, B.A.

1. To whom did Milton address his tract *of Education?* Mention important views of Milton on the subject.

2. Give a list of Milton's other prose works prior to and including the year 1644.

3. (*a*) Compare the division of L'Allegro which may be entitled "His life set to Music" with the corresponding division of Il Penseroso.

(*b*) Fantastic toe; secure delight; wanton heed; loathed Melancholy; vain deluding joys; removed place; buskin'd stage; sad virgin; virtuous ring; civil-suited morn; explain the epithets and complete the lines.

4. In whose honour was Arcades written? State briefly the theme of its songs.

5. Show that Comus displays the characteristics of a Masque. What makes the spell lose its hold, and why?

6. Give the parentage of Comus. Trace the train of thought which the Lady's song awakens in Comus. What reference does the Attendant Spirit make to the song?

7. Assign each of the following extracts to its speaker:

(*a*) How charming is divine philosophy!

(*b*) Their port was more than human, as they stood.

(*c*) In courts of princes, where it first was named.

(*d*) ..... if all the world
Should in a pet of temperance feed on pulse.

(*e*) .....when the gray hooded Ev'n,
Like a sad votarist in palmer's weeds.

(*f*) What need a man forestall his date of grief?

(*g*) Strict Age and sour Severity,
With their grave saws in slumber lie.

(*h*) And disinherit Chaos that reigns here.

Give the contexts of any six of the foregoing quotations.

8. Notice differences between Lycidas and In Memoriam.

(*b*) Show that the language of Lycidas demands especial care by selecting and explaining a few of its more difficult lines.

9. What are your impressions of Lycidas? (Let any quotations you may make be brief.)

10. How does Milton use the following in the argument of *Areopagitica*:

(*a*) Rise, Peter, kill and eat.

(*b*) The Temple of the Lord.

(*c*) The Cave of Mammon.

11. How does Milton describe the consequence of licensing "among the Clergy themselves?"

12. Explain the following allusions: Vetus Comœdia; the Pontifical College; Padre Paolo; St. Angelo; that continuous court-libell.

THIRD YEAR HONOURS.

HALLAM:—*Middle Ages;* caps i, iii, v, ix.

Examiner,..... CHAS. E. MOYSE, B.A.

1. Describe the conquests of Charlemagne and notice the leading features of his character.

2. Describe the crusades of Louis IX, and notice the leading features of his character.

3. Make brief notes on the following: Companies of Ordonnance; Bretigny Montlehery; Blois and Montfort; the War of the Public Weal.

4. Before the death of Henry V (1125) almost all the cities of Lombardy exhibited republican institutions. How does Hallam treat the growth of these?

5. Describe the attempt of Doria on Venice.

6. Make a note on caroccio, Arnold of Brescia, Walter de Brienne, Lorenzo de Medici, Pavia, Sir John Hawkwood.

7. What assembly established the Imperial Chamber? Mention the functions of that Chamber. What plan was established for the purpose of carrying the decrees of the Chamber into effect?

8. Mention in order ten leading events in the history of Germany between 888 and 1495.

9. Treat these subjects from cap. ix:

(*a*) Pastoreaux and Bianchi.

(*b*) Jurisprudence.

(*c*) Dante and Petrarch.

THIRD YEAR ADDITIONAL AND HONOURS.

BRYCE:—*Holy Roman Empire;* MACAULAY:—*History of England,* Vol. I. cap. I.

Examiner,..... CHAS. E. MOYSE, B.A.

1. Notice (*a*) The Mosaic of the Lateran; (*b*) Petrarch and the Empire; (*c*) The Edict of Caracalla; (*d*) the Eighth Electorate; (*e*) Hippolytus a Lapide.

2. Treat the following subjects.

(*a*) The recognition of the Holy Roman Empire by the states of Europe.

(*b*) Napoleon, his Imperial views and his policy.

3. Give Macaulay's opinions on:

(*a*) The Doctrine of Divine Right.

(*b*) The attempt to force the Liturgy on Scotland.

THIRD YEAR HONOURS.

WORDSWORTH:—*The Prelude.*

Examiner, ... CHAS. E. MOYSE, B.A.

1. Indicate in tabular form the development of thought in the Prelude, and illustrate your scheme by references or quotations.

[If you adopt the sketch given in the Second Year lectures, you will be expected to amplify and supplement it.]

2. What themes for poetic treatment attracted Wordsworth (Bk. I.)?

3. Show how Wordsworth regarded:

(*a*) University life in the old times;

(*b*) England as one of the confederate powers;

(*c*) The death of Robespierre.

4. (*a*) There was a boy: ye knew him well, ye cliffs
And islands of Winander!

(*b*) From the heart
Of London and from cloisters there, thou camest,
And didst sit down in temperance and peace.

In what strain does Wordsworth continue?

5. Mention allusions to Spenser, Charon, Homer, Calvert, Utopia, Christabel.

THIRD YEAR HONOURS.

SPENSER:—*Faerie Queene*, bk. i.; CHAUCER:—*Knightes Tale*; SIDNEY:—*Apologie for Poetrie*.

Examiner,.....CHAS. E. MOYSE, B.A.

1. What light do Gabriel Harvey and Ludowick Bryskett throw on the early history of the Faerie Queene?

2. Mention six of the chief characters in the First book which are allegorical, and say what each signifies.

3. Why is the House of Holiness essential to the general idea of the First book? What takes place there?

4. Notice archaisms in Spenser.

5. What conditions of combat does Theseus impose on Palamon and Arcite? Describe the lists.

6. Who was Emetreus? Describe him.

7. Give the meanings of the following words, and the etymology of those which are in italics: *gery*, beete, herte-spon, *pyne*, bleynte, aretted, *del*, *apayd*, appalled, *starf*, clothred, *upyaf*.

8. How does Sidney define Poetry?

9. Mention, without proofs, the leading arguments advanced in the comparison of the Poet with the Historian and the Philosopher.

10. Show that the Philosophers of Greece appeared "under the masks of Poets."

11. In what terms does Sidney refer to Chaucer and Spenser? What argument is illustrated by the Bishop in Chess?

12. Notice metre and rime, and the way in which European languages lend themselves to the latter.

THIRD YEAR ADDITIONAL AND HONOURS.
EARLY ENGLISH.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Translate, as literally as possible:—
   (*a*) Robert of Gloucester, (B), ll. 70-92.
   (*b*) Metrical English Psalter, Ps. CIII. ll. 65-84.
   (*c*) Dan Michel of Northgate, Sermon on Matthew, ll. 73-107.

2. Translate:
   (*a*) Umgriped me weeles of quede.
   (*b*) Este bueth oune brondes.
   (*c*) With lossum chere he on me loh.

(*d*) Geynest under gore.
(*e*) Miles murgeth huere makes.
(*f*) Olepi me mot hym depe ine the water.
(*g*) For Herods sak his witherwin.
(*h*) Wit recles forwit him he fell.
(*i*) For mi soru sal son kele.
(*j*) Us au to thinc na ferlye.
(*k*) Non wantrokiynge of kueade.

3. Distinguish between the Northern and Southern dialects in regard to
(*a*) Verb : Indic, pres. and pret.
(*b*) Participle : present and past.
(*c*) Infinitive.
(*d*) Noun : gen. sing. and pl.

B.A. ADDITIONAL AND HONOURS.

EARLY ENGLISH.

MORRIS AND SKEAT :—Part II., extt. X.-XX.; MATTHEW ARNOLD :—*Essays in Criticism.* (The Second.)

Examiner, ... CHAS. E. MOYSE, B.A.

1. Translate.

(*a*) Ext. XI. A. ll. 93-108.

(*b*) Ext. XIII. ll. 235-252.
ll. 407-422.

(*c*) Ext. XV. Passus Sextus, ll. 1-15.
Passus Septimus, ll. 252-261.

(*d*) Ext. XVI. ll. 443-487.

(*e*) Ext. XX. ll. 145-192.

Derive were, wrake, freke, ledez, houen, bordun, i-writhen, fayn, leches, smat, menze, styh, sundri.

II. (*a*) "The power of French literature is in its prose writers, the power of English literature is in its poets." What national characteristics are mentioned as causing this, and why do they cause it?

(*b*) In what respect is Addison provincial?

(*c*) In what connection and to what effect does Matthew Arnold quote M. Renan's criticism?

B.A. ADDITIONAL AND HONOURS.

ANGLO-SAXON.

Examiner,..... ...CHAS. E. MOYSE, B.A.

1. Translate:—

(*a*) Cynewulf, Riddle IV.
(*b*) Wanderer, ll. 92-105.
(*c*) Anglo-Saxon Chronicle, An. 894, from beginning to "faran woldon."
(*d*) Maldon, ll. 74-88; 295-308.

2. Translate: Ne thurfe wé us spillan gif gé spédath to tham; earn æses georn; hloh tha modi mann; ic eom frymthi to thé thæt .....; earh Oddan bearn; héow and hynde; mé thæt thuhte wrættlicu wyrd; Sanges rowe, héapum ferath; ne sceal næfre his torn to rycene beorn of his breostum acythan; ac hira thær tu sæ on lond wearp; gefor Æthered cyning.

3. Answer questions 2, 3, 6, 7, of the Third Year Honour paper.

(For Honours only.)

1. Translate; Beowulf, ll. 80-90; 277-285; 356-370.

2. Translate: he thæs frofre gebad; ætheling ærgod; fiftena sum; methel-wordum frægn; eofor-lic scionon ofer hleor-beran gehroden golde fah and fyrheard ferh wearde héold; Snyredon ætsomne tha secg wisode under Heorotes hrof; forgrand gramum; and for arstafum usic sohtest.

3. Translate:—
(*a*) (D) in the Third Year Paper.
(*b*) An extract from Ælfric on the Old Testament.

B.A. ADDITIONAL AND HONOURS.

POPE:—*Essay on Criticism; Essay on Man;* BUCKLE:—*Hist. of Civilization in England,* Vol. I., caps. I., II.; Vol. II., cap. VIII; Vol. III., cap. I.

Examiner,.....CHAS. E. MOYSE, B.A.

1. When was the Essay on Criticism published?

(*b*) What reference does Pope make to young Maro, Mævius, Dennis, Fungoso, Duck-Lane, Chaucer, Garth, Durfey, Appius, Ajax? When the reference requires an explanatory note, make it.

(*c*) By what epithet does Pope characterize Waller and Denham respectively?

2. How does Pope view the Language of Poetry?

3. Say where each of the following lines occurs and give its context:

(*a*) One science only will one genius fit
(*b*) True wit is Nature to advantage dress'd
(*c*) Some ne'er advance a Judgment of their own
(*d*) The bookful blockhead, ignorantly read
(*e*) At length Erasmus—

4. Give in tabular form the leading arguments of Epistle IV. Expand one of them.

5. Quote any striking passage, not exceeding ten lines, from Epistles II and III respectively.

6. Account for the Deism of the Essay on Man. Of what larger scheme did the Essay on Man form a part?

7. (*a*) "In the ordinary march of society an increasing perception of the regularity of nature destroys the doctrine of chance."
How does Buckle illustrate this?
(*b*). What use does Buckle make of the theory of the parallelogram of forces?

8. In what connection does Buckle bring the Sudras into his argument, and what does he say about them?

9. How did the Spanish church secure its influence prior to the Seventh century?

10. When speaking of the revival of Spain in the Eighteenth century, what does Buckle say regarding (*a*) medicine, (*b*) mining, (*c*) woollen manufacture?

11. Give some account of the attacks on Scotland (*a*) by the Northmen, (*b*) by the English during the Fourteenth century.

B.A. ADDITIONAL AND HONOURS.

TENNYSON:—*In Memoriam; Idylls of the King.*

Examiner,..... CHAS. E. MOYSE, B.A.

1. How does Tennyson treat these subjects?
(*a*) The conflict between Faith and Nature.
(*b*) Faith as opposed to Reason.
(*c*) The identification of Hallam with Nature.

2. Compare the sections which deal with the anniversary of Hallam's death. Mention the other anniversary-sections of In Memoriam. Supplement the answer just given by referring to other "landmarks" of importance.

3. State, without much detail, features In Memoriam which seem to you Wordsworthian.

4. Give the contexts of

(*a*) The Danube to the Severn gave

(*b*) "Where wert thou, brother, those four days?"

(*c*) A spectral doubt which makes me cold.

(*d*) There rolls the deep where grew the tree.

(*e*) You tell me doubt is Devil-born.

(*f*) 'Tis held that sorrow makes us wise.

(*g*) From state to state the spirit walks.

(*h*) The pillar of a people's hope.

Say in what sub-divisions the lines occur.

5. Notice differences between Tennyson's treatment of Gareth and Lynette and the prose account.

6. What does Merlin tell Vivien about "a fair young squire?"

In what strain does Guinevere speak after Arthur bids her farewell?

7. Take Pelleas and Ettarre or the Last Tournament and give in the form of concise summary the course of the poem.

8. Mention the songs in the Idylls, and state what you consider to be their relation to the inner meaning of the Idylls in which they are found.

9. In what connection do the following lines occur;

(*a*) Reel back into the beast and be no more

(*b*) .....the pilot star of my lone life

(*c*) Man dreams of Fame, while woman wakes to love

(*d*) He was counted best by two yards in casting bar or stone.

(*e*) Thou mightiest and thou purest among men.

10 "The old order changeth, yielding place to new." Continue the speech to the end, or give its substance in your own words.

THIRD YEAR AND B. A. HONOURS.

CONSTITUTIONAL HISTORY:—*Lectures;* FREEMAN:—*Growth of the English Constitution.*

Examiner,..... .....CHAS. E. MOYSE, B.A.

1. Give six of the leading articles of Magna Charta and make comments on them.

2. Apply your knowledge of the history of the period under review to

(*a*) Obligation to serve abroad.

(*b*) The giving of land to the Church.

(*c*) John, Earl of Warenne.

3. Sketch the political career of Hubert de Burgh.

4. Notice the two provincial councils of the year 1283.

5. Treat the following subjects:

(*a*) The growth of Kingship.

Comment on this statement: "Six times at least in the space of nine hundred years has the Great Council of the Nation thus put forth the last and greatest of its powers."

(*b*) In the Old-English times "the Church and the Nation were absolutely the same."

(*c*) Folkland.

B.A. HONOURS.

FREEMAN:—*Historical Geography*, 4 Caps; MACAULAY:—Vol. 1., Cap. 3.

Examiner, ... CHAS. E. MOYSE, B.A.

1. What non-Aryan races have settled in Europe in historic time?

2. Trace the growth of the Mark of Brandenburg.

3. Show by what steps France acquired portions of the kingdom of Burgundy.

4. Notice the leading features in the territorial history of Denmark and Bohemia.

5. Sketch the growth and partition of the Spanish Monarchy in Europe.

6. Mention four treaties which changed the face of the European map, and indicate carefully how each changed it.

7. Treat the following subjects in Macaulay's Sketch of the condition of England in the Time of Charles II.:

(*a*) The mineral wealth of the country;

(*b*) The composition of the standing army and its equipment;

(*c*) The amount and the sources of the revenue.

INTERMEDIATE EXAMINATION.

JEVONS' LOGIC.

Examiner, ... J. CLARK MURRAY, LL.D.

1. Define (*a*) singular and general, (*b*) concrete and abstract, (*c*) relative and absolute terms, giving an example of each.

2. Take the terms which you give as examples in the previous question, and explain the meaning of each in extension and intension.

3. Give a logical analysis of the following sentences:—

(*a*) Not once or twice in our fair island story
The path of duty was the way to glory.

(*b*) Not every one that saith unto me, Lord, Lord, shall enter into the Kingdom of Heaven.

(*c*) No one is free who is a slave to his passions.

(*d*) Blessed are they which are persecuted for righteousness sake.

4. Define Opposition, and distinguish its different forms.

5. "All just actions are expedient." If this proposition be true, what inference may be drawn with regard to the truth or falsity of each of the following propositions:—

(*a*) No just actions are expedient;

(*b*) Some just actions are expedient;

(*c*) Some just actions are not expedient;

(*d*) Some expedient actions are just;

(*e*) No inexpedient actions are just?

6. State in the form of a regular syllogism the argument:—

"He hath brought many captives home to Rome,
Whose ransoms did the general coffers fill;
Did this in Cæsar seem ambition?

7. In the following syllogism distinguish the several terms and propositions:—"The interactions of mind and matter are facts, and yet are incomprehensible; so that some facts are incomprehensible."

8. Name the mood and the figure of the syllogism in the previous question, and reduce it to the first figure.

9. State the only legitimate modes of reasoning in Hypothetical and Disjunctive syllogisms respectively.

10. In regard to each of the following arguments state whether it is fallacious, and if so, why.

(*a*) If A. B. has no scientific attainments, he is unfit to superintend a great engineering work; but as he has no scientific attainments he must be unfit for such a work.

(*b*) Mathematical studies improve the mind, and therefore history cannot improve the mind, as it is not a mathematical study.

(*c*) If these arguments be sound, that cannot be a bad cause which they defend. Now, as it is not a bad cause, the arguments must be sound.

(*d*) The honourable gentleman charges me with receiving bribes: the honourable gentleman ought to remember that those who live in glass houses should not throw stones.

11. Explain one Logical, and one Material, Fallacy, giving an example of each.

12. Explain one of the Methods of Induction, or the Deductive Method.

MENTAL AND MORAL PHILOSOPHY.

B.A. ORDINARY EXAMINATION.

CALDERWOOD'S HANDBOOK OF MORAL PHILOSOPHY.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Explain the relation of Psychology to Ethics.

2. Show that the knowledge of moral distinctions (*a*) is a knowledge of matters of fact, (*b*) is not of the nature of sensation, but (*c*) is of the nature of judgment.

3. State the Development theory on the knowledge of moral distinctions.

4. State and compare Calderwood's and Bain's theories of Conscience.

5. What is Duty or Obligation (*a*) on the Intuitional, (*b*) on the Utilitarian, theory?

6. Give the Ethical Classification of Natural Impulses.

7. State and discuss Necessitarianism.

8. Distinguish "the various theories propounded in explanation of the order of things in which we exist."

9. Write a short note on the Origin of Evil.

10. Explain the relation of Morality to Religion.

B.A. ORDINARY EXAMINATION.

ROGERS' POLITICAL ECONOMY.

Examiner,.....J. CLARK MURRAY, LL.D.

1. What articles have, what have not, an economical value; and what is the cause of this value?

2. Explain the economical advantages of the Division of Labour.

3. Explain (*a*) the origin of money, (*b*) the reason why the precious metals are generally used for money, (*c*) the nature of any of the substitutes for money.

4. What are the three heads under which the price of a commodity may be distributed?

5. Explain and discuss Malthus' theory of population.

6. Explain fully any of the schemes for raising the rate of wages.

7. Define Rent; and show that land may yield rent, even when it is not paid to a landlord.

8. State the rules of Taxation laid down by Adam Smith.

9. Explain (*a*) the distinction between Direct and Indirect Taxation, (*b*) their respective advantages and disadvantages.

THIRD YEAR ADDITIONAL.

MILL'S LOGIC AND MURRAY'S HANDBOOK OF PSYCHOLOGY.

Examiner,.....J. CLARK MURRAY, LL.D.

1. State Mill's doctrine (*a*) on the import of Names, or (*b*) on the import of Propositions, or (*c*) on the classification of Nameable Things.

2. Explain and discuss his theory on the nature of Inference.

3. Explain and illustrate either (*a*) the Joint Method of Agreement and Difference, or (*b*) the Deductive Method.

4. (*a*) State the various modes of explanation of the Laws of Nature. (*b*) To what does all such explanation amount? (*c*) What are its limits?

5. Illustrate the formation of Perceptions in general by an example.

6. (*a*) State the grounds on which it is maintained that we cannot perceive distance by sight alone, and (*b*) explain how this perception is formed in the case either of near or of remote bodies.

7. Discuss either the question of the *Primum Cognitum*, or the controversy between the Conceptualists and Nominalists.

8. Discuss the Empirical theory on any one of the ideas :—Self, Time or Space.

9. State the theory of Pleasure and Pain.

10. Explain the origin of sympathy and antipathy.

11. Write a short note on the feelings either of the Beautiful or of the Ludicrous.

12. Discuss either (*a*) the Freedom of the Will, or (*b*) the Materialistic and Agnostic theories of existence.

THIRD YEAR HONOURS.

GREEK PHILOSOPHY AND CICERO'S DE NATURA DEORUM.

Examiner,.....J. CLARK MURRAY, LL.D.

1. "Thales Milesius, qui primus de talibus rebus quaesivit, aquam dixit esse initium rerum.....Anaximandri autem opinio est, nativos esse deos, longis intervallis orientes, occidentesque, eosque innumerabiles esse mundos.....Post Anaximenes aëra deum statuit, eumque gigni, esseque

immensum, et infinitum, et semper in motu.....Inde Anaxagoras, qui accepit ab Anaximene disciplinam, primus omnium rerum descriptionem et modum mentis infinitæ vi ac ratione designari et confici voluit.....Empedocles autem, multa alia peccans, in deorum opinione turpissime labitur. Quatuor enim naturas, ex quibus omnia constare vult, divinas esse censet, quas et nasci et exstingui perspicuum est, et sensu omni carere. Nec vero Protagoras, qui sese negat omnino de diis habere quod liqueat, sint, non sint, qualesve sint, quidquam videtur de natura deorum suspicari." Translate, and make a short note on each of the philosophers mentioned.

2. "Haec in philosophia ratio contra omnia disserendi, nullamque rem aperte judicandi, profecta a Socrate, repetita ab Arcesila, confirmata a Carneade, usque ad nostram viguit ætatem." Explain this passage.

3. "Zenonem, quem Philo noster coryphaeum appellare Epicureorum solebat, quum Athenis essem, audiebam frequenter." Tell what you know of the Zeno referred to here, and distinguish him from the other two most prominent philosophers of the same name.

4. Sketch the philosophy either of Heraclitus or of the Pythagoreans.

5. Sketch either the Dialectic or the Ethics of Plato.

THIRD YEAR HONOURS.

Examiner,.....J. CLARK MURRAY, LL.D.

I. Fraser's *Extracts from Berkeley*.

1. Explain the sense in which Berkeley maintains the existence of matter and the doctrine on the subject which he attacks.

2. Sketch briefly the general drift of the *New Theory of Vision*.

3. Sketch the argument by which the New Theory of Vision is applied in *Alciphron* to prove the existence of God.

4. Explain Berkeley's doctrine of Causation, especially as brought out in *Siris*.

II. Thomson's *Outline of the Laws of Thought*.

1. Explain either (*a*) the different meanings in which *form* and *matter* are employed, or (*b*) the different functions of language.

2. Distinguish Division, Definition and Denomination; and show their correspondence with the three powers of Conception.

3. Give Thomson's and Hamilton's Tables of Judgments.

4. State any two of the forms of Immediate Inference, recognized by Thomson in addition to those of the old logicians.

5. Explain why Thomson rejects the Fourth Figure, while he admits the Second and Third.

6. Express in Euler's or in Hamilton's notation the Mood A I I in the First Figure.

B.A. ADDITIONAL.

MODERN PHILOSOPHY.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Sketch, in brief outline, the chief periods in the development of modern philosophy.

2. Give an account of the philosophy of Hobbes.

3. Sketch Locke's philosophy, both on its polemical and on its constructive side; and give an estimate of the former.

4. Tell what you know of Condillac, or Bonnet, or Helvetius.

5. State the salient points in the philosophy of Leibnitz.

6. Name the English representatives of Idealism prior to Berkeley, and sketch Berkeley's own system.

7. Trace the connection of Hume's Scepticism with the Empiricism of Locke.

8. Describe the direction given to Empiricism by Hartley, and mention some of its subsequent representatives.

B A. ADDITIONAL

LORIMER'S INSTITUTES OF LAW.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Distinguish the different Schools of Jurisprudence.

2. Sketch, in brief outline, the facts obtained by application of the historical method to the doctrine of Human Autonomy.

3. Explain Lorimer's theory of Conscience.

4. Explain the relation of Natural and Positive Laws, and show, from that relation, that Positive Laws cannot, for example, make 90 cents equal to a dollar.

5. Discuss the distinction between Perfect and Imperfect Obligations.

6. What is the relation of Order and Liberty?

7. In what sense does the idea of Liberty not imply, in what sense alone does it imply, the idea of Equality?

8. Give a detailed account either (*a*) of the Secondary Sources of Positive Law, or (*b*) of its Objects.

A.B. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

(I.) ARISTOTLE'S NICOMACHEAN ETHICS.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Define *ἐνέργεια*, *ἔργον*, *δύναμις*, *ἕξις*.

2. Explain Aristotle's division of the virtues.

3. Explain fully his definition of Ethical Virtue, giving, as nearly as possible, his own terms.

4. Give a full outline either of Book V (on Justice) or of Book VI. (on Dianoetic Virtue).

5. Distinguish (*a*) three kinds of friendship, (*b*) three political constitutions with the corruptions to which they are severally subject.

6. State Aristotle's theory of pleasure, and point out its connection with his theory of virtue.

(II.) DESCARTES' METHOD AND MEDITATIONS. SPINOZA'S ETHICS.

Examiner,.....J. CLARK MURRAY, LL.D.

1. State the rules of Descartes' Method, and the rules of Morals which he lays down.

2. What, according to Descartes, is the essential difference between men and brutes ?

3. "Cogito, ergo sum." Explain the significance of this in the philosophy of Descartes.

4. Point out the dualism in Descartes' system, and explain the attempts made at its reconciliation.

5. Give Spinoza's definitions of Substantia, Attributum, Modus, Res Libera, Res Necessaria, Aeternitas.

6. Distinguish the three kinds of cognition recognized by Spinoza, and explain the statement that "summus mentis conatus summaque virtus est res intelligere tertio cognitionis genere."

7. Distinguish the three primitive affections recognized by Spinoza.

8. Give his definition of Action and Passion, and explain the statements :—1. "Nos eatenus patimur, quatenus naturae sumus pars, quae per se absque aliis non potest concipi ; 2. Fieri non potest, ut homo non sit naturae pars et ut nullas possit pati mutationes, nisi quae per solam suam naturam possint intelligi, quarumque adaequata sit causa."

9. Explain the proposition: "Mentis amor intellectualis erga Deum est ipse Dei amor, quo Deus seipsum amat, non quatenus infinitus est, sed quatenus per essentiam humanae mentis sub specie aeternitatis consideratam explicari potest, hoc est, mentis erga Deum amor intellectualis pars est infiniti amoris, quo Deus seipsum amat."

10. In what sense does Spinoza claim immortality for the human mind?

(III.) SPENCER'S FIRST PRINCIPLES.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Explain fully Spencer's reconciliation of Religion and Science.

2. State his definition of Philosophy and its data.

3. (*a*) What is the direction of motion? (*b*) Show that this is "a necessary deduction from that primordial truth which transcends proof."

4. Give a full exposition of the Law of Evolution.

5. Write a short criticism of Empirical Evolutionism, as represented by Spencer's First Principles.

(IV.) THE PHILOSOPHY OF KANT.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Explain the general relation of Kant's three Kritiks.

2. What is meant by the Empirical Reality and the Transcendental Ideality of space and time?

3. Sketch either (*a*) the Transcendental Deduction of the Categories or (*b*) the Schematism of the Pure Understanding.

4. State the Analogies of Experience, and show their connection with the corresponding Categories.

5. How are the Ideas of Pure Reason severally formed?

6. Sketch Kant's exposure of the dialectical inferences involved either in the Transcendental Paralogism or in the Transcendental Ideal.

7. Sketch the Analytic of the Pure Practical Reason.

8. Give the substance of the Kritik of the Teleological Judgment.

(V.) MURRAY'S OUTLINE OF SIR W. HAMILTON'S PHILOSOPHY.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Define Philosophy (*a*) in its more extensive, (*b*) in its more limited signification; and (*c*) state the reasons for this limitation.

2. Give Hamilton's classification of the Philosophical Sciences.

3. (*a*) To what extent does the testimony of consciousness admit of doubt? (*b*) By what method alone can its veracity be impugned?

4. Distinguish Sensation and Perception, and illustrate the law of their relation.

5. Give either (*a*) the classification of the Qualities of Body, or (*b*) that of the Theories of Perception.

6. Distinguish the Conservative, the Reproductive, and the Representative, Faculties.

7. What are the essential notes or characters by which we are enabled to distinguish original from derivative cognitions.

8. Distinguish the Absolute and the Infinite, and illustrate the distinction in relation to Space.

9. State Hamilton's theory of Causality, and apply it to the problem of the Freedom of the Will.

10. What are the conditions of the proof of God's existence?

(VI.) MILL'S SYSTEM OF LOGIC.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Give Mill's criticism of Aristotle's table of Categories, and his own substitute for it.

2. Compare Mill's doctrine of the Categories with Kant's.

3. Explain fully Mill's theory of Reasoning.

4. State the Experimental Methods.

5. Compare Mill's doctrine of Causality with Kant's.

6. State fully either (*a*) the requisites of a Philosophical Language, or (*b*) the classification of the Fallacies.

7. Distinguish the Chemical, Geometrical, Physical, and Historical Methods in Sociology.

8. Discuss the relative value of these methods.

(VII.) MAINE'S ANCIENT LAW.

Examiner,.....J. CLARK MURRAY, LL.D

1. What was the effect of Codes on the development of law?

2. Describe (*a*) the origin and function of Legal Fictions, (*b*) other agencies which attain the same object.

3. (*a*) What was the ancient Roman *Jus Gentium?* (*b*) Show how it became historically connected with the doctrines of Stoicism.

4. Describe the influence of Rousseau on the conception of the Law of Nature.

5. "By the Confarreation, Coemption, and Usus, the woman passed *in manum viri*, that is, in law she became the *Daughter* of her husband." Explain this statement, and connect it with ancient jural relations.

6. What was (*a*) the probable origin of Primogeniture, (*b*) its effect on the Law of Succession?

7. State objections to the popular theory, that proprietary rights originated in occupancy.

8. "The penal law of ancient communities is not the law of Crimes; it is the law of Wrongs (Torts)." Explain this in light of the condition of ancient communities.

MODERN LANGUAGES AND LITERATURE.

FRENCH.

FIRST YEAR.

Examiner,.....P. J. DAREY, M.A., B.C.L

1. *Léandre.* Mon père ne vous plaignez (*a*) point que j'aime une inconnue sans naissance et sans bien. Ceux (*b*) de qui je l'ai rachetée (*c*) viennent de me découvrir qu'elle est de cette ville et d'honnête famille; que ce sont eux qui l'y (*d*) ont dérobée à l'âge de quatre ans: et voici un bracelet qu'ils m'ont donné qui pourra (*e*) nous aider à trouver ses parents.

Argante.—Hélas! à voir ce bracelet, c'est ma fille que je perdis à l'âge que vous dites. *Géronte.* Votre fille?

Argante.—Oui ce l'est; et j'y (*f*) vois tous les traits qui m'en peuvent rendre assuré.

MOLIERE, *Fourberies de Scapin.* Ac. III., sc. xii.

2. (*a*) At what tense and mood is *plaignez?* Why is the object *vous* placed before it?

(*b*) Write the noun which is represented by the pronoun *ceux.*

(*c*) Why has rachetée two *e's?*

(*d* and *f*) What does *y* refer to?

(*e*) Write the primitive tenses of that verb.

3. Write in full the *Present* and *Imperfect* of the *Subjunctive Mood* and the *Past Participles* of: *connaître, absoudre, tenir, savoir, mettre* and *naître.*

4. What is the difference of meaning between *résous* and *résolu; bruyait* and *bruissait, crû* and *cru, repartir* and *répartir?*

5. Write six neuter verbs which take *être* in their compound tenses.

6. What do you remark about the past participles of reflected verbs? Illustrate your answer by examples.

7. Are the *Preterite Indefinite, Preterite Definite* and *Subjunctive Present* primitive or derivative? If primitive, what tenses do they form; if derivative, from what tenses are they formed?

8. Translate into French:

The pen with which I am writing is not very good. She whom we love is amiable. A man on whose friendship I can rely. I have some foreign flowers, the smell of which is very agreeable. Have the men been called from the meadow? He applies himself to nothing whatever. They have spread the news that the king is dead. My uncle would have been very rich if he had not lost so much lately. We bathe often in summer. I must take this letter to the Post Office before three o'clock. I do not believe that she laughs at you. They live on vegetables and on milk food.

9. Translate into French:

The wainscot of the staircase of that house is very beautiful; the first story and the basement have high ceilings, and the floors, the parlour, the entrance hall and the dressing-room are also well finished. The frame of that engraving is very pretty. There are two arm-chairs, three stools in that room. The shovel, the tongs, the poker, the fender, are all in their places.

INTERMEDIATE EXAMINATION.

Examiners,..... { P. J. Darey M.A., B.C.L.
Prof. Miller.

1. Translate into English:

Où fuyez-vous, madame?
N'est-ce pas à vos yeux un spectacle assez doux,
Que la veuve d'Hector pleurant à vos genoux?
Je ne viens point ici, par de jalouses larmes,
Vous envier un cœur qui se rend à vos charmes.
Par une main cruelle, hélas, j'ai vu percer

Le seul où mes regards prétendaient s'adresser.
Ma flamme par Hector fut jadis allumée ;
Avec lui dans la tombe elle s'est enfermée.
Mais il me reste un fils. Vous saurez quelque jour,
Madame, pour un fils jusqu'où va notre amour ;
Mais vous ne saurez pas, du moins je le souhaite,
En quel trouble mortel son intérêt nous jette,
Lorsque de tant de biens qui pouvaient nous flatter,
C'est le seul qui nous reste, et qu'on veut nous l'ôter.
Hélas ! lorsque, lassés de dix ans de misère
Les Troyens en courroux menaçaient votre mère,
J'ai su de mon Hector lui procurer l'appui :
Vous pouvez sur Pyrrhus ce que j'ai pu sur lui.
Que craint-on d'un enfant qui survit à sa perte ?
Laissez-moi le cacher en quelque île déserte ;
Sur les soins de sa mère on peut s'en assurer,
Et mon fils avec moi n'apprendra qu'à pleurer.

J. RACINE, *Andromaque*, III, 4.

2. To whom are the preceding words addressed ?

State what you know about her country, parents, relations and present condition.—Which is the real subject in the sentence : N'est-ce pas.....à vos genoux? and how is *que* in line 3 to be explained—when is ending in *ant* variable, and when not ?—When is the part. past of reflected verbs variable, and when not ?—Replace *où* in line 7 by its equivalent. Explain : *un enfant qui survit à sa perte.*

3. Correct, and state by what rules : Donnez-moi une demie-livre de sucre.—Ces fleurs sentent bonnes.—Quand il se promenait, il saluait tous les bons gens qu'il rencontrait.—Votre ami est Français et le mien est Allemand d'une famille distinguée.—L'hiver est bien doux en Italie, et bien rigoureux en Canada.—Vous trouvez ci-inclus la copie du contrat.—Il va souvent nue-tête. Feue sa mère était respectée de tout le monde.

4. Translate into French :

Your curiosity, said the sage, has been so general, and your pursuit of knowledge so vigorous, that novelties are not now very easily to be found ; but what you can no longer procure from the living may be given by the dead. Among the wonders of this country are the Catacombs, or the ancient repositories, in which the bodies of the earliest generations were lodged, and where, by the virtue of the gums which embalmed them, they yet remain without corruption. I remembered that my father had obliged me to the improvement of my stock, not by a promise which I ought not to violate, but by a penalty, which I was at liberty to incur ; and then determined to gratify my predominant desire, and, by drinking at the fountain of knowledge, to quench the thirst of curiosity.

Johnson, Rasselas.

5. Jodelle, Hardy, Rotrou. State what you know about their efforts to resuscitate the theatre in France. Who were their followers? Specify the character of the tragedy of Racine. Show this character in Andromaque.

6. Who were the authors of: Le *Menteur*, *Cinna*, les *Tragiques*, le *Traité de la Servitude volontaire*; *Gargantua*; *la Franciade*; *la Défense et Illustration de la Langue Française*?

7. Translate into French:

To set at variance. He is always well dressed. To draw a deed. He will meet his match. He is a good speaker. He does not know which way to turn himself. To run headlong into danger. If you have a liking to it. To come to the point. The least said is the soonest mended. To lay up something for a rainy day.

THIRD YEAR.

Examiner,..... P. J. Darey, M.A., B.C.L.

1. Traduisez en anglais :

Je ne prends ces propos que pour une boutade ;
C'est un signe pourtant que l'esprit est malade.
Et si tu ne prends garde à ces velléités
Tu descends le penchant qui mène aux lâchetés.
Songe à Raymond à qui tu refusais ta porte ;
Il avait cependant une excuse plus forte :
Il fallait qu'il nourrît sa femme, au lieu que toi
Tu vis seul, et l'on a toujours assez pour soi.
Ah ! j'aurais aujourd'hui beau jeu.....mais sois tranquille,
Je n'abuserai pas d'un triomphe facile.

Ponsard, *L'honneur et l'argent*.

2. Traduisez les expressions suivantes tirées de *L'honneur et l'argent* :

L'amour-propre égare. L'âge où l'on nous morigène. J'étalerais ma honte effrontément. Il fait courir. C'en est fait, je renais. Plût au ciel que... Contiens-toi. On vous tient à l'écart. Quelle tournure ! Vous triplerez la mise. Que ne m'avez-vous cru, vous n'en seriez pas là. Il barbouillait jadis quelque méchante croûte. Richard n'est point du tout ton fait. Il faut de ses conseils faire le plus grand cas. L'emportement des cœurs. Vous vous remuez autant qu'une souche. Et votre fille, oui-dà, doit le connaître à fond.

3. Traduisez en français :

The English Government now chose to wring money out of Cheyte Sing. It had formerly been convenient to treat him as a sovereign prince; it was

now convenient to treat him as a subject. Dexterity inferior to that of Hastings could easily find, in the general chaos of the laws and customs, arguments for either course. Hastings wanted a great supply. It was known that Cheyte Sing had a large revenue, and it was suspected that he had accumulated a treasure. Nor was he a favourite at Calcutta. He had, when the Governor-general was in great difficulties, courted the favour of Francis and Clavering.

MACAULAY, *Warren Hastings.*

4. Sous quelle triple influence le génie littéraire de la France s'était-il formé au XVIIe siècle? En quoi ce génie fut-il différent au XVIIIe siècle ?

5. Quand Le Sage vécut-il? Quels sont ses deux chefs-d'œuvre

Qu'est-ce que le *Vert Vert?* Qui est-ce qui l'a écrit?

Répondez à la même question pour la *Métromanie* et le mariage de Figaro.

Quel fut le premier écrit de J. J. Rousseau?

Quel est son chef-d'œuvre?

Qui est-ce qui a écrit le *Traité des Etudes*? Quel est le jugement de Villemain sur cet ouvrage?

6. Traduisez en français :

Hastings had intended after settling the affairs of Benares to visit Lucknow, and there to confer with Asaph-ul-Dowlôh. But the obsequious courtesy of the nabob vizier prevented this visit. With a small train he hastened to meet the Governor-general. An interview took place in the fortress which, from the crest of the precipitous rock of Chumar looks down on the waters of the Ganges.

MACAULAY, *Warren Hastings.*

THIRD YEAR ADDITIONAL.

Examiner,..... .....P. J. DAREY, M.A., B.C.L.

1. Ecrivez en français une courte biographie de LaFontaine et de Fénelon. Faites ressortir le caractère de ce dernier tel que le donne Paul Albert.

2. Que pensez-vous de la morale des fables de La Fontaine? Et de son style?

3. Traduisez en anglais :—

L'alouette et ses petits avec le maître d'un champ.

Ne t'attends qu'à toi seul ; c'est un commun proverbe.
Voici comme Esope le mit
En crédit:
Les alouettes font leur nid
Dans les blés quand ils sont en herbe,
C'est-à-dire environ le temps

Que tout aime et que tout pullule dans le monde,
Monstres marins au fond de l'onde,
Tigres dans les forêts, alouettes aux champs.
Une pourtant de ces dernières
Avait laissé passer la moitié d'un printemps
Sans goûter le plaisir des amours printanières.
A toute force enfin elle se résolut
D'imiter la nature, et d'être mère encore ;
Elle bâtit un nid, pond, couve et fait éclore
A la hâte : et tout alla du mieux qu'il put.

LAFONTAINE, *liv. IV., fable* 22.

4. Pourquoi Racine écrivit-il les *Plaideurs?* A-t-il écrit d'autres comédies?

5. Traduisez en anglais :

Léandre.....je me sers d'un étrange artifice :
Mais mon père est un homme à se désespérer ;
Et d'une cause en l'air, il faut bien le leurrer.
D'ailleurs j'ai mon dessein, et je veux qu'il condamne
Ce fou qui réduit tout au pied de la chicane.
Mais voici tous nos gens qui marchent sur nos pas.

6. Quels sont les représentants du genre burlesque au XVIIe siècle? Dites tout ce que vous savez du plus fameux d'entre eux.

7. Dans quel genre de littérature Boileau s'est-il illustré? Quels sont les auteurs qui avaient déjà écrit dans ce genre?

8. Traduisez en français :

He now at once recollected me ; for the gloomyness of the place and the approaching night had prevented his distinguishing my features before. Yes, sir, returned Mr. Jenkinson, I remember you perfectly well ; I bought a horse, but I forgot to pay for him. Your neighbour Flamborough is the only prosecutor I am afraid of at the next assizes ; for he intends to swear positively against me as a coiner. I am heartily sorry, sir, I ever deceived you, or indeed any man ; for you see, continued he, pointing to his shackles, what my tricks have brought me to.

GOLDSMITH, *The Vicar of Wakefield.*

THIRD YEAR HONOURS.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Que sait-on de la famille et de la position sociale de La Bruyère? Où naquit-il? Quand? Où mourut-il? a-t-il longtemps vécu? Dans quelle famille illustre? En quelle qualité? Quel était le caractère de cette famille?

2. Répondez aux mêmes questions pour Boileau.

3. Quand parut la première édition des *Caractères*. Sous quel titre ? Pourquoi La Bruyère adopta-t-il ce titre ? Qui est-ce qui publia cet ouvrage ? Combien cette publication lui rapporta-t-elle ?

4. Racontez ce que vous savez de l'élection de La Bruyère à l'Académie.

5. Quelle place La Bruyère occupe-t-il dans la Littérature française ? Est-il à proprement parler un penseur ? Expliquez votre réponse.

6. Répondez aux mêmes questions pour Boileau.

7. Dites, d'après Paul Albert, tout ce vous savez du caractère de Boileau.

8. Quel est le chef-d'œuvre de Boileau ? Qu'est-ce que le *Lutrin* ?

9. Quelle grande lutte Boileau eut-il à soutenir ? Qui était son principal adversaire ?

10. Par quoi Raynouard est-il connu dans l'histoire de la formation de la langue française ?

11. Quelle influence les peuples germaniques ont-ils eue sur la formation de la langue française ?

12. Comment, d'après Ampère, la langue française s'est-elle formée ?

13. Traduisez en anglais ces phrases tirées des *Plaideurs* : Courir les brelans. Tu fais le gentilhomme. Des plus huppés. Garde-fous. Obtenez un arrêt comme il faut que je dorme.....Quelque honnête faussaire, qui servît ses amis, en le payant, s'entend. Un faux exploit. Un crasseux. Rapports d'experts. Voyez le beau sabbat qu'ils font à la porte. Pourquoi l'injurier. Il le fait assigner. Le père aura l'exploit, la fille le poulet. Je les mets pis à faire. Mais je ne sais pourquoi, plus je vous envisage, moins je me remets, Monsieur, votre visage.

B.A. ORDINARY EXAMINATION.

Examiner,.....P. J. Darey, M.A., B.C.L.

Traduisez en anglais :

1. *Philinte*. On fait assez de cas de son oncle Damis.
Qu'en dites-vous, Madame ?—*Célimène*. Il est de mes amis.
Philinte. Je le trouve honnête homme, et d'un air assez sage.
Célimène. Oui ; mais il veut avoir trop d'esprit dont j'enrage.
Il est guindé sans cesse ; et dans tous ses propos,
On voit qu'il se travaille à dire de bons mots.
Depuis que dans la tête il s'est mis d'être habile,
Rien ne touche son goût, tant il est difficile.
Il veut voir des défauts à tout ce qu'on écrit.
Et pense que louer n'est pas d'un bel esprit ;

Que c'est être savant que trouver à redire ;
Qu'il n'appartient qu'aux sots d'admirer et de rire ;
Et qu'en approuvant rien des ouvrages du temps,
Il se met au-dessus de tous les autres gens.
Aux conversations même il trouve à reprendre
Ce sont propos trop bas pour y daigner descendre :
Et les deux bras croisés du haut de son esprit
Il regarde en pitié tout ce que chacun dit.

MOLIERE, *le Misanthrope*, A. ii s.v.

2. A quel genre de comédie *le Misanthrope* appartient-il? Quelles sont les critiques que l'on a faites de cette comédie ? Sont-elles bien fondées ?

3. En combien de périodes divise -t- on l'histoire de la littérature française au XIXe siècle ?

4. Citez six historiens appartenant à la 1re période et six à la seconde. Faites connaître les écrits de ces auteurs.

5. A quelle période Benjamin Constant, Manuel, Royer Collard appartiennent-ils? Comment se sont-ils illustrés ?

6. Nommez six critiques fameux du gouvernement de Juillet.

7. Qui est-ce qui a écrit : le *Cours de littérature dramatique*, le *Tableau de la littérature française au seizième siècle*, la *Légende des siècles*, *les trois Mousquetaires*, *l'Histoire de la Révolution française*, le *combat de la Sérieuse*, *le Lac*, *Louis XVII*, *La sainte alliance des peuples* ?

8. Traduisez en français :

Don't take for granted all what you hear. It does not matter to me whether you do it or not. The laborer is at the top of the ladder. He took my hand, and in a low tone bade me good-bye. Every one ought to be here by this time ; don't let us wait any longer. We are very much afraid that some accident has happened to our aunt ; we have not heard from her for a long time. If you stir yourself ever so little you must succeed in that business. I would rather he would come himself, although I should like to avoid him the trouble.

9. Traduisez en français :

Cheyte Sing was in the greatest dismay. He offered two hundred thousands pounds to propitiate the British Government. But Hastings replied that nothing less than half a million would be accepted. Nay, he began to think of selling Benares to Oude as he had formerly sold Allahabad and Rohileund. The matter was one which could not be well managed at a distance ; so Hastings resolved to visit Benares.

MACAULAY : *Warren Hastings.*

FOURTH YEAR ADDITIONAL.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Traduisez en anglais :

Je déjeunerais bien pour me distraire, mais mais la portière a oublié mon lait du matin. Il me reste un croûton durci qui je brise à force de poignets et que je grignote nonchalamment comme un homme bien au-dessus des vanités du monde et des pains mollets. Habituellement la perspective qui s'ouvre devant ma fenêtre me ravit. C'est un chevauchement de toits dont les cimes s'entrelacent, se croisent, se superposent, et sur lesquels de hautes cheminées dressent leurs pitons. Hier encore je leur trouvais un aspect alpestre, et j'attendais la première neige pour y voir des glaciers ; aujourd'hui je n'aperçois que des tuiles et des tuyaux de poêle. Les pigeons, qui m'aidaient à mes illusions agrestes ne me semblent plus que de misérables volatiles qui ont pris les toits pour basse-cour ; la fumée qui s'élève en légers flocons, au lieu de me faire songer aux soupiraux du Vésuve, me rappelle les préparations culinaires et l'eau de vaisselle ; enfin le télégraphe que j'aperçois de loin sur la vieille tour de Montmartre, me fait l'effet d'une ignoble potence dont le bras se dresse au-dessus de la cité.

SOUVESTRE, *Le philosophe sous les toits.*

2. Traduisez en français :

Adam. Dear master, I can go no further : I die for food! Here lie I down and measure out my grave. Farewell, kind master.

Orlando. Why, how now, Adam! no greater heart in thee. Live a little ; comfort a little ; cheer thyself a little. If this uncouth forest yield anything savage, I will either be food for it, or bring it for food to thee. Thy conceit is nearer death than thy powers. For my sake be comfortable hold death a while at the arm's end ; I will here be with thee presently ; and if I bring thee not something to eat, I will give thee leave to die ; but if thou diest before I come, thou art a mocker of my labour. Well said ; thou lookest cheerly ; and I'll be with thee quickly.—Yet thou liest in the bleak air. Come I will bear thee to some shelter ; and thou shalt not die for lack of a dinner, if there live anything in this desert. Cheerly, good Adam.

SHAKESPEARE, *As you like it.* Ac. II, S. VI.

3. Dites tout ce que vous savez des origines et transformations du théâtre.—Mystères—Farces et moralités.—Comment il se transforma au XVIe siècle.

4. Nommez les deux auteurs les plus originaux du XVIe siècle. Développez votre réponse.

5. Faites connaître les différents éléments dont s'est formée la langue française.

6. Dans quel siècle la langue française s'est-elle définitivement formée ? Quels sont les auteurs qui se sont occupés à la rendre pure et élégante ? Quand vécurent-ils ? Quelles sont les institutions qui ont travaillé à ce même but ?

B.A. HONOUR EXAMINATION.

GRAMMAIRE HISTORIQUE ET LITTÉRATURE FRANÇAISE.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Donnez la date du plus ancien monument de la langue française. Dites ce que vous savez de ce monument.

2. Qu'est-ce qu'on appelle *chansons de gestes ?* Quelle est la plus fameuse ? A quelle époque remonte-t-elle ? Donnez un court résumé de cette chanson.

3. Qu'est-ce que les poëmes *armoricains ?* Citez-en quelques-uns.

4. Qui était Marie de France ? A quelle époque vécut-elle ? Quel genre de littérature a-t-elle cultivé.

5. Quels sont les auteurs du *Roman de la Rose ?* Quels sont les principaux personnages de ce roman ?

6. Dites tout ce que vous savez sur Charles d'Orléans.

7. Quelles sont les causes qui ont amené la Renaissance en France ? Quand le Collège de France a-t-il été fondé ?

8. Faites connaître les Essais de Montaigne. Pourquoi Montaigne a-t-il écrit cet ouvrage ? Comment est-il considéré dans la littérature française ? Donnez le titre de quelques-uns des chapitres des *Essais*.

9. Qu'appelez-vous accent *tonique* en français ? Où se place-t-il ?

10. Qu'est-ce que vous appelez verbes anomaux ? Combien y en a-t-il ? Pourquoi sont-ils ainsi appelés ? Nommez-en six.

11. Donnez les étymologies de : *ailleurs, partout, amont, aval, demain, désormais, assez.*

12. Donnez les six adverbes d'affirmation et de négation avec leurs étymologies.

13. Traduisez en anglais :—

Et au pis aller, la distribution et variété de touts les actes de ma comedie se parfournit en un an. Si vous avez prins garde au bransle des mes quatre saisons, elles embrassent l'enfance, l'adolescence, la virilité et la vieillesse du monde : Il a joué son jeu ; il ne sait autre finesse que de recommencer, ce sera tousjours cela mesme.

MONTAIGNE, *Essais.*

14. Ecrivez en français moderne :—

Ço sent Rollans la veue ad perdue ;
Met sei sur piez quanqu'il poet s'esvertuet ;
En sun visage sa couleur ad perdue,
De devans lui ot une perre brune
X Colps i fiert par doel e par rancune ;
Cruist li acers ne freint ne n'esguignet
E dist li quens : "Sante Marie, aine."

Chanson de Roland.

1. Ecrivez en français moderne :—

Et en brief tens, dit-il, le vent se feri ou voille et nous ot tolu la veue de la terre, que nous ne veismes que le ciel et yeau, et chascun jour nous loisgna le vent des païs où nous avions esté nez.

JOINVILLE.

GERMAN.

FIRST YEAR.

Examiner, ...C. F. A. MARKGRAF, M.A.

1 Translate into English :—

(A) Und das war vernünftig ; denn in zweifelhaften Dingen muß man immer das Sicherste und Beste wählen, und lieber eine Höflichkeit aus Irrthum begehen als eine Grobheit. Als aber der König weiter sagte und auf seinen Begleiter deutete : „Dies ist Seine Majestät der russische Kaiser," da war's doch dem ehrlichen Mann, als wenn zwei lose Vögel ihn zum Besten haben wollten, und er sagte : „Wenn ihr Herren mit einem ehrlichen Mann euern Spaß haben wollt, so sucht einen Andern, als ich bin. Bin ich deßwegen aus Westindien hierher gekommen, daß ich euer Narr sei ?" Der Kaiser wollte ihn zwar versichern, daß er allerdings derjenige sei. Allein der Fremde gab kein Gehör mehr. „Ein russischer Spaßvogel möget ihr sein," sagte er. Als er aber nachher im Wirthshause die Sache erzählte und andern Bericht bekommen hatte, da kam er ganz demüthig wieder, bat fußfällig um Vergebung, und die großmüthigen Monarchen verziehen ihm, wie natürlich, und hatten hernach viel Spaß an dem Vorfall.

Hebel, Der Fremdling in Memel.

(B) „Gegrüßet seid mir, edle Herrn,
Gegrüßt ihr, schöne Damen !
Welch reicher Himmel ! Stern bei Stern !
Wer kennet ihre Namen ?
Im Saal voll Pracht und Herrlichkeit
Schließt, Augen, euch ; hier ist nicht Zeit,
Sich staunend zu ergötzen."

Der Sänger drückt die Augen ein
Und ſchlug in vollen Tönen;
Die Ritter ſchauten muthig drein,
Und in den Schooß die Schönen.
Der König, dem das Lied gefiel,
Ließ, ihn zu ehren für das Spiel,
Eine goldne Kette reichen.

„Die goldne Kette gib mir nicht,
Die Kette gib den Rittern,
Vor deren kühnem Angeſicht
Der Feinde Lanzen ſplittern;
Gib ſie dem Kanzler, den du haſt,
Und laß ihn noch die goldne Laſt
Zu andern Laſten tragen.

Goethe, Der Sänger.

2. (*a*) Decline in both numbers —einen Begleiter, dem ehrlichen Mann, die golden Kette, ohne Damen (See Ext. A & B);—(*b*) Give the 4 cases Sing of —good black tea; every green leaf (Blatt, n.); a large stone house.

3 Point out the characteristic features of the *strong* declension of nouns, and state the classes of nouns belonging to the I. and II. division in the Plural of this declension.

4. Parse the following verbs, and give the Present Infinitive of each :—war, muß, ſagte, deutete, wollten, ſucht, bin gekommen, möget, erzählte, bekommen hatte, ſtaunend, kennet, drückt ein, gefiel, haſt (See Ext. A & B);—and (*b*) nehmt ab, wiedergegeben, reitet aus, zurückgebracht, weißt, angezogen.

5. Conjugate abreiſen and verkaufen, giving the 3rd Sing. and 2nd Plural of the Present, Imperfect, Pluperfect, First and Second Future, of the Indicative.

6. Translate :—Wie viel Uhr iſt es? Es iſt ein Viertel nach ſieben. Iſt es ſchon drei Viertel auf ſechs? Nein, es iſt erſt ein Viertel auf fünf. Deine Uhr geht zu ſpät. Er hat bis halb zehn gewartet. Wir ſind vor einigen Monaten bei unſeren Großeltern in Köln geweſen. Ich rathe Ihnen gern das Beſte. Was für Bücher leſen Sie am liebſten? Sein Sie ſo gut, mir die Sachen holen zu laſſen.

7. (*a*) When is the English preposition *of* not expressed in German? (*b*) When is the English preposition *from* rendered by von, and when by aus? Give short examples for *a* and *b*.

8. Translate into German:—

This road leads to the fields, and that *one* into the woods. There are a great many fruit-trees in the garden of our neighbour. My elder brother shall (is to) go to Europe next summer. We have been working diligently since this morning. Frederick the Great of Prussia lived in the last century. They lived formerly in the country. Copy this exercise. Shut the doors and open the windows. The streets of little villages are often not so dusty as the streets of large towns. The rose is the queen of (the) flowers. No one can count the stars of (the) heaven. We have no time to stay here *any* longer.

INTERMEDIATE EXAMINATION.

Examiner,..... ....C. F. A. Markgraf, M.A.

1. Translate into English:—

(A) Gehüllt sind seine schönen Glieder
In Gold und Purpur wunderbar,
Bis auf die Sohlen wallt hernieder,
Ein leichter faltiger Talar;
Die Arme zieren Spangen,
Um Hals und Stirn und Wangen
Fliegt duftend das bekränzte Haar.
Die Zither ruht in seiner Linken,
Die Rechte hält das Elfenbein.
Sie müssen ihm zu Füßen sinken,
Es trifft sie, wie des Blitzes Schein.
„Ihn wollten wir ermorden;
Er ist zum Gotte worden!
O schläng' uns nur die Erd' hinein!"
„Er lebet noch, der Töne Meister!
Der Sänger steht in heil'ger Hut.
Ich rufe nicht der Rache Geister,
Arion will nicht euer Blut.
Fern mögt ihr zu Barbaren,
Des Geizes Knechte, fahren;
Nie labe Schönes euern Muth!"

A. W. Schlegel, Arion.

(B) Es flimmt und flammt rund um ihn her,
Mit grüner, blauer, rother Gluth ;
Es wallt um ihn ein Feuermeer ;
Darinnen wimmelt Höllenbrut.
Jach fahren tausend Höllenhunde,
Laut angehetzt, empor vom Schlunde.

Er rafft sich auf durch Wald und Feld
Und flieht laut heulend Weh und Ach ;
Doch durch die ganze weite Welt
Rauscht bellend ihm die Hölle nach,
Bei Tag tief durch der Erde Klüfte,
Um Mitternacht hoch durch die Lüfte.

Im Nacken bleibt sein Antlitz stehn,
So rasch die Flucht ihn vorwärts reißt.
Er muß die Ungeheuer sehn,
Laut angehetzt vom bösen Geist ;
Muß sehn das Knirschen und das Jappen
Der Rachen, welche nach ihm schnappen.—

Bürger, Der wilde Jäger.

(*a*). Give briefly the substance of the fable as recorded by Herodotus and on which the ballad is founded, from which Ext. A is taken.

(*b*). State what you know about the origin of the legend of '*the wild huntsman*'.

2. (See Ext. A & B) (*a*) Parse the following verbs, and write down the *irregular* forms (beside those that may here be given) of each :—fliegt, hält, trifft, ist worden, steht, rufe, mögt, bleibt, reißt, muß. (*b*) Give the Past Participles of :—fahren empor, rafft sich auf, raucht nach.

3. (*a*) Give the 4 cases Sing. of :—ein leichter, faltiger Talar ; das bekränzte Haar ; grüner, blauer, rother Gluth (See Ext. A & B). (*b*) Decline in both numbers :—that great traveller (m.) ; their young relation (f.).

4. (*a*) Instance some adjectives formed from adverbs of *time* and *place*. (*b*) What adjectives are *indeclinable*? (*c*) When are *cardinal* numbers declined ? When are hundert and tausend declined like nouns, and when like the def. article ? Give examples.

5. Write down the prefixes of those compound verbs which are partly *separable*, partly *inseparable*. Instance *three* such verbs, and show the difference in their accentuation, meaning and conjugation when used *a*. separably, *b*. inseparably.

6. (*a*) Give the 3rd Sing. and 2nd Plu. of the Present, Imperfect, Perfect, and Second Future *active*, in both the Indicative and Subjunctive, and the Imperative (same persons) of :—befehlen and ſich einbilden (reg. impr. refl.) (*b*) Conjugate „abſchicken", giving the 2nd Sing. and 3rd Plur. of all the moods and tenses *passive*.

7. Translate :—Das iſt mir lieb. Seine Worte haben mir ſehr wehe gethan. Nimm dich in Acht! Ich warne dich davor. Laß Jedem das Seine! Worüber klagt er denn? Es iſt uns da ſehr gut ergangen. Du gibſt dir keine Mühe. Wir thaten es um euretwillen. Sie waren außer ſich vor Freude.

8. Translate into German :—

These things were mine, but at present they are yours. Edward's native town lies on the Thames, but mine lies on the Danube. Matilda's sisters came to meet her at the railway-terminus. We did not know (Imperf.) where he came from, nor whither he wished to go. They went down. He ran to and fro. Many ranges of mountains along the boundaries (Grenze, f.) of this country are covered with great forests. If I were in your place, I should not do that. That every one experiences (erfahren) *both* good and bad, is true. I have a violent headache and a sore throat; I think I have caught cold. We should not have believed that they would depart so soon. While their house was *being* built, they lived outside the city-gate at a friend's house.

THIRD YEAR.

Examiner,.....C. F. A. MARKGRAF, M.A.

I. Ueberſetzen Sie ins Engliſche :—

Aus Chamisso's „Peter Schlemihl" :—

3. Kap., Seiten 22-23.

Aus Lessing's „Minna von Barnhelm" :—

2. Aufzug. 3. Auftritt. Seite 31.

II. Grammatik.

1. Erwähnen Sie einige unperſönlichen Verben, welche (*a*) den Genitiv, (*b*) den Dativ regieren; und fügen Sie kurze Beiſpiele hinzu.

2. Was für Verben werden durch die Suffixe eln, igen, iren gebildet? Führen Sie einige ſolcher Verben an.

3. (*a*) Nach welchen Verben muß im Deutſchen der Infinitiv ſtatt des Partizips des Präſens gebraucht werden, wie es im Engliſchen der Fall iſt? (*b*) Welche Verben regieren zwei Akkuſative?—Geben Sie kurze Beiſpiele für *a* und *b*.

4. Stellen Sie in den folgenden Ausdrücken die verschiedenen Formen des deutschen Imperativs dar :—Look here! Go on reading! Answer quickly! Take courage! Be silent! Do not go away!

5. Geben Sie die entsprechenden *englischen* Idiome der folgenden Sätze : —Ihr werdet euch verhört haben. Wäre es doch wahr! Ich wüßte wohl ein Mittel. Was hätten wir thun sollen? Er kam geritten. Bist du meiner eingedenk? Sie wollen es nicht gesehen haben. Es wird mir geholfen.

III. Uebersetzen Sie ins Deutsche :—

Your brother always was and remained my true friend, although he sometimes appeared *to be* my adversary. He shook my hands warmly when we parted, and promised to write to me at (bei) the first opportunity. The general spoke to the soldiers and exhorted them to do their duty. I had hastened to bring them this news, but I found that they knew it already. He was obliged to replace the money, because he had lost it. They mourn the death of a very near and dear relation. A stony and dusty road brought us at last to (an) the end of our journey. The young man's conduct is very *much* to be praised. I do not know what to think of, nor what to say to it. He can only justify himself by showing the letter he received from you. The sight of this quiet valley secluded from the world as it were, made a *strong* (deep) impression on (auf) the man accustomed only to the noise (Geräusch, n.) of large cities.

IV. Litteratur.

1. Erklären Sie die eigenthümliche Form der altdeutschen Dichtung, welche unter dem Namen „die Alliteration" bekannt ist. Nennen Sie die alliterirenden Gedichte, die uns aus der fränkischen Periode zugekommen sind. Welche Gedichte derselben Periode bezeichnen den Uebergang von der alliterirenden zur gereimten Dichtung?

2. Zeigen Sie den unterschiedlichen Charakter in der Poesie der Minnesänger und Meistersänger.

3. Weshalb wird Opitz der Vater der neuern deutschen Dichtung genannt?

4. Berichten Sie kurz, was Ihnen über das Leben und die Schriften von Gryphius, A. von Haller, Gellert und Winckelmann bekannt ist.

B.A. ORDINARY EXAMINATION.

Examiner, ...C. F. A. MARKGRAF, M.A.

I. Grammatik.

1. Geben Sie die Bedeutung und Ableitung der folgenden Wörter:—Zug, Tritt, Fahrt, dick, Plauderei, Schlüssel, glatt, thöricht, Bissen, Ereigniß, Verhältniß, abermalig, Ueberbleibsel, Heiland, Tugend, gewärtig, Standhaftigkeit, Festung, Gepränge, Flüchtling, Fähnrich, unfehlbar, genehm, Geschmack verächtlich.

2. Welche Verben sind als primitiv oder als Wurzelverben zu betrachten? Führen Sie Beispiele an.

3. Geben Sie Beispiele von Verben, die von Substantiven, Adjektiven und Verben abgeleitet sind.

4. That is to be the answer to my question? You are silent? The rings only work backward? Let him seek for honest gain! Would that even the whole world might hear us!—If he had cried out, they would have found him; if the buried one hath already arisen; he would treat them as if they were his own subjects; he nodded his head, as if he meant to say "quite right".—Uebersetzen Sie die obigen Sätze, und die letzten vier mit Auslassung der Konjunktion 'if'.

5. Erklären Sie die Wortfolge in normalen und invertirten Sätzen.

6. Was sind Substantivsätze, Adjektivsätze, und Adverbialsätze?

II. Uebersetzen Sie aus Schiller's „Wallensteins Tod":—

Vierter Aufzug. Erster Auftritt. Seite 124.

Fünfter Aufzug. Fünfter Auftritt. Seiten 186–187.

(*a*) Was können Sie über die Darstellung und den Styl dieses Dramas sagen?

(*b*) Geben Sie eine Charakterskizze von Wallenstein,

(*c*) Berichten Sie kurz die Handlung in den Schlußscenen.

III. Uebersetzen Sie ins Deutsche:—

Thus, in the thirty-eight year of his life, in the midst of a career of victory, was Gustavus Adolphus called away; the preponderating influence of his mind gave another character to the constitution of Germany and the progress of our development. He had already conceived the idea of getting himself nominated king of Rome, and his design, the extent of which is known to none, may also have comprehended other countries of Europe. He often expressed his astonishment that the present age did not produce generals like those of antiquity; and when he was told that the altered character of the weapons and tactics of war, and the existence of strong fortifications

were the cause, he replied : " The difference is not in the nature of the weapons, but in the degeneration of men ; if we could again meet with the heart of an Alexander, the courage of a Hannibal, and the enterprising spirit of a Cæsar, we should see renewed the deeds of Alexander, the conquests of Hannibal, and the successes of Cæsar."

Kohlrausch, *History of Germany*.

THIRD YEAR HONOURS.

Examiner, ...C. F. A. Markgraf, M.A.

I. Ueberſetzen Sie aus Wieland's „Oberon" :—

Seite 22. Die erſten drei Strophen.
Nummern 68, 69, 70.

II. Litteratur.

1. (*a*) Heben Sie die Hauptzüge aus Wieland's Leben hervor. (*b*) Berichten Sie, was Ihnen über die Anlage und Ausführung ſeines „Oberon" bekannt iſt. (*c*) Nennen Sie ſeine beſten Romane.

2. Welcher Richtung haben ſich Herder's literariſche Beſtrebungen vorzugsweiſe zugewendet? Nennen Sie ſeine drei bedeutendſten Werke.

3. (*a*) Kontraſtiren Sie die Originalgenies mit den Mitgliedern des Hainbundes. (*b*) Schreiben Sie kurze Notizen über Klinger und Voss.

4. Welche Schriften Goethe's und Schiller's gehören der Sturm und Drangperiode an? Welches von Goethe's Werken insbeſondere weiſ't auf den Urſprung der geiſtigen Aufregung in dieſer Periode?

5. Geben Sie einen kurzen Abriß von Schiller's Leben, und erwähnen Sie ſeiner vorzüglichſten Dramen und Balladen.

6. Nennen Sie die Autoren der folgenden Werke :—Titan, Ueber die Weisheit der Inder, Kaiser Octavianus, Thiodolf der Isländer, Godwi, Das Marmorbild, Käthchen von Heilbronn, Münchhausen, Die Abassiden.

7. Was können Sie über die literariſche Tendenz der ſchwäbiſchen Schule ausſagen? Welche Schriftſteller dieſer Schule verdienen beſondere Beachtung?

III. Die Deutsche Sprache (Schleicher).

1. Was iſt unter der vediſchen Sprache zu verſtehen? In welchem Verwandtſchaftsgrade ſteht das Sanscrit zu dieſer Sprache?

2. Wodurch läßt sich die Annahme rechtfertigen, daß die slawodeutsche oder nordeuropäische Grundsprache sich zuerst von der indogermanischen Ursprache ausschied?

3. Veranschaulichen Sie das successive Hervorgehen der acht indogermanischen Grundsprachen.

4. In welche Periode der deutschen Sprache ist die Entstehung des deutschen Mythus und die Ausbildung der ältesten epischen Dichtung zu versetzen; und mit welchem Grunde?

5. Weshalb ist das Gotische von großer Bedeutung für die deutsche Sprachforschung?

6. (*a*) In welchen Zeitraum reicht der Gebrauch der Runen? Erklären Sie diese Schriftform. (*b*) Was ist unter der wulfilanischen Schrift zu verstehen?

7. Geben Sie die entsprechenden Formen im A.H.D., M.H.D. und N.H.D. für die gotischen Wörter kviman, kaurn, vakjan, mikils, brikan; tiuhan, satjan, itan, thata; skapjan, hilpan, vairpan, slêpan; giban, dags, fôtus.

8. Charakterisiren Sie das Mittelhochdeutsche im engern Sinne im Vergleiche mit dem Alt- und Neuhochdeutschen.

THIRD YEAR ADDITIONAL.

Examiner, ...C. F. A. Markgraf, M.A.

I. Uebersetzen Sie aus Körner's „Leier und Schwert":—

Aufruf. Seiten 19–20.
Lützow's wilde Jagd. Seite 32.

(*a*). Schreiben Sie eine kurze Lebensskizze von Theodor Körner.

(*b*). Nennen Sie seine besten Gedichte, und bezeichnen Sie den Charakter derselben. Was können Sie über seine dramatischen Leistungen berichten?

II. Uebersetzen Sie aus Schiller's „Wilhelm Tell":—

1. Aufzug. 3. Scene. Seite 26.
2. Aufzug. 2. Scene. Seite 69.

(*a*). Wann, und auf wessen Anregung, wurde dieses Drama begonnen und vollendet? Beruht dasselbe auf historischer Grundlage?

(*b*). Welchen Grundsätzen hat der Autor darin besondern Ausdruck gegeben? In welcher Scene concentrirt sich die moralische Kraft dieses Dramas?

III. Uebersetzen Sie ins Deutsche.—

(A) No nation respected the laws of hospitality more than the Germans. To refuse a stranger, whoever he might be, admission to

the house, would have been disgraceful. His table was free and open to all, according to his means. If his own provisions were exhausted, he who was but recently the host, would become the guide and conductor of his guest, and together they would enter, uninvited, the first best house. There also they were hospitably received. When the stranger took his leave, he received as a parting present whatever he desired, and the giver asked as candidly on his side for what he wished.

Kohlrausch, *History of Germany*.

(B) The fatigue of our crossing the Appennines, and of our whole journey from Lorotto to Rome, was very agreeably relieved by the variety of scenes we passed through. For not to mention the rude prospect of rocks rising one above another, or the gutters deep-worn in the sides of them by torrents of rain and snow-water, or the long channels of sand winding about their bottoms, that are sometimes filled with so many rivers: we saw, in six days' travelling, the several seasons of the year in their beauty and perfection. We were sometimes shivering on the top of a bleak mountain, and a little while after basking in a warm valley, covered with violets and almond-trees in blossom, the bees already swarming over them, though but in the month of February.

Addison, *Remarks on Italy*.

B.A. HONOURS AND ADDITIONAL.

Examiner,..... C. F. A. MARGKRAF, M.A.

I. Ueberſetzen Sie aus Lessing „Nathan der Weiſe":—

II. Aufzug. 5. Auftritt. Seiten 60–61.

(*a*) In welcher Abſicht hat Lessing dieſes Drama geſchrieben?

(*b*). Erwähnen Sie ſeiner bedeutendſten dramatiſchen Werke.

(*c*). In welcher Richtung insbeſondere hat dieſer Schriftſteller den nachhaltigſten Einfluß auf die deutſche Litteratur ausgeübt?

(*d*). Schildern Sie kurz ſeinen perſönlichen und literariſchen Charakter.

II. Ueberſetzen Sie aus Heine's „Buch der Lieder":—

Die Minneſänger. Nummer 11. Seite 65.

Lieder der Heimkehr. Nummer 37. Seite 151–152.

Berg-Idylle. Nummer 3. Seite 208.

III. Ueberſetzen Sie aus Schiller's „Geſchichte des dreißigjährigen Krieges":—

Viertes Buch. Seiten 325-326.

IV. Ueberſetzen Sie ins Deutſche:—

We were seated upon the deck, watching the changing hues of the clouds as they were touched by those soft, rich colours so characteristic of the tropics, when a native friend approached, and asked, if we saw Chimborazo "Why, no!" we exclaimed, "is it clear from clouds?" "Look," said he, turning toward the east. We looked, raising our eyes to an angle generally assumed when taking in the summit of mountains. But nothing appeared, save the usual heavy clouds banked high along the horizon. "Where are you looking?" exclaimed our friend, casting a glance at our eyes; "here!" and he pointed away up among the clouds. We looked, and never will we forget that view. Resting upon the high bank of clouds, which seemed to have assumed a marble firmness, stood Chimborazo, its snow-fields four miles above us, flushing gold and crimson from the rich colors of the west.

Myers, *Life and Nature among the Tropics.*

B. A. HONOURS.

Examiner,..... ....C. F. A. Markgraf, M.A.

I. Ueberſetzen Sie aus Goethe's „Fauſt" die auf Seiten 37–38, 72–73 und 161 bezeichneten Stellen.

(*a*) In welche Periode von Goethe's Leben reichen die Anfänge dieſes Dramas, und wann wurde es vollendet?

(*b*) Schildern Sie Fauſt's Charakter, wie ihn Goethe dargeſtellt hat.

(*c*) Wie iſt der Charakter von Mephistopheles in dieſem Drama aufzufaſſen?

II. Mittelalterliche Litteratur (1150–1350).

1. Welche Dichtungsform wurde von den höfiſchen Dichtern oder Minneſingern vorzüglich gepflegt. Nennen Sie die vornehmſten unter ihnen.

2. Erklären Sie die Nibelungenſtrophe, die ſpätere künſtlichere Strophe (liet), die Leiche, und den Spruch.

3. Erklären Sie die Gattungen der didaktiſchen Poeſie. Erwähnen Sie der vorzüglichſten Gedichte in dieſer Dichtart, und nennen Sie die Verfaſſer derſelben.

4. Vergleichen Sie den Charakter der volksthümlichen Epik mit dem der höfiſchen?

5. In welche Sagenkreise gehören die folgenden Gedichte:—Die Haimondskinder, Iwein, Parcival, Lohengrin, Eneit, Die Rabenschlacht, Hugdietrich, Gudrun, Das Nibelungenlied.

6. Welche Denkmäler der deutschen Prosa lassen sich in diesem Zeitraume aufweisen?

III. Die Deutsche Sprache (Schleicher).

1. Was können Sie über den Ursprung, die Entwickelung und Verbreitung der deutschen Schriftsprache berichten?

2. (*a*) In welchem Verhältniß stehen die deutschen Mundarten zu der Schriftsprache? (*b*) Zeigen Sie den Unterschied zwischen hochdeutsch (oder oberdeutsch) und niederdeutsch.

3. Was ist unter den Grundvocalen und deren Steigerung und Schwächung zu verstehen?

4. Vergleichen Sie in übersichtlicher Zusammenstellung die Vocalreihen der indogermanischen Ursprache und der deutschen Grundsprache mit den vollständigen Vocalreihen des Mittelhochdeutschen.

5. Erklären Sie die folgenden mittelhochdeutschen Formen und die Entwickelung der entsprechenden Formen im Neuhochdeutschen.

M.H.D.	N.H.D.
niwer neben niuwer	neuer
triwe " triuwe	treue
showen " shouwen	schauen
frowen " frouwen	frauen

6. Erläutern Sie durch Beispiele aus dem Mittelhochdeutschen die Zusammenziehung nach Consonantenausstoß.

HEBREW.

ELEMENTARY COURSE.

Examiners, { .....Rev. Prof. D. Coussirat, B.A. B.D., Officier [d'Académie.
.....Rev. James Awde, B.A.

Translate the following sentences:

1. זֶה סֵפֶר תּוֹרַת מֹשֶׁה (2). אֲנִי הֹלֵךְ לָמוּת (1)

(*a*) Decline סֵפֶר, sing. and plural, with one light and one grave suffixes.

(*b*) Render into Hebrew: This book is good.

(*c*) Attach the light suffixes to the plural of תּוֹרָה

(*d*) Mark the tone on מֹשֶׁה, and state the rule.

(*e*) Explain the pointing of לְ

2 (1) שְׁמוֹנָה חֳדָשִׁים׃ (2) יֵשׁ לָהֶם בָּתִּים וְעֲבָדִים

(*a*) Give the sing., abs. and const. states of the plural nouns in these sentences.

(*b*) Explain the use of the Cardinal numbers as to genders.

(*c*) Render into Hebrew: They have three sons and two daughters. We have one God.

(*d*) Explain the pointing of ן׳

3. (1) עֲצַת יְיָ לְעוֹלָם תַּעֲמֹד (2) וּבְדֶרֶךְ חַטָּאִים לֹא עָמַד

(*a*) Explain the pointing of יְהוָה׳

(*b*) Translate עוֹלָם into Greek and Latin.

(*c*) Conjugate the future Kal of עָמַד, and state the change effected by the pause in the second sentence.

(*d*) Mark the tone on וּבְדֶרֶךְ, and give the rule.

4. מִי יִתֵּן רֹאשִׁי מַיִם וְעֵינִי מְקוֹר דִּמְעָה

(*a*) Parse יִתֵּן and conjugate the pret. Kal of that verb.

(*b*) What is the plural of רֹאשׁ, abs. and const. states?

(*c*) What is the accented syllable of מַיִם?

(*d*) Render into Hebrew: The Lord has given and the Lord has taken away.

(*e*) Translate תִּתִּי and explain its pointing.

5. (1) עַם־זוּ יָצַרְתִּי לִי תְּהִלָּתִי יְסַפֵּרוּ׳ (2) יֹאבַד יוֹם אִוָּלֵד בּוֹ׳

(*a*) What is the usual word for זוּ?

(*b*) Parse the verbs in these sentences.

(*c*) When is יֹאבַד used instead of יֹאבֵד?

(*d*) What move of tone and change of vowel would ן conversive effect in יֹאבֵד?

(*e*) Point out to what class these verbs belong.

(*f*) Write the apocopated form of פָּנָה in the future of Kal, Niphal, Hiphil, Piel and Pual.

(*g*) Explain the — in יְסַפְּרוּ.

(*h*) Render into Hebrew: He has visited him.—To visit me.—My killing.—He shall teach him in the name of the Lord.

INTERMEDIATE COURSE.

Examiners, ...Rev. Prof. D. Coussirat, B.A., B.D., Officier [d'Académie.
....Rev. James Awde, B.A.

1. Translate: (*a*) Genesis, Chap. I. verses 16, 24, 28.
(*b*) Exodus, " XX. " 5, 24, 25.
(*c*) Deuteronomy, Chap. XXXII, verses 8, 9, 36, 43.

2. Parse the following words:—

(*a*) וַיַּעַשׂ—Write the full form of this word.—Mark the accented syllable and state the rule.—What are the words used to express creation and formation?

(*b*) לְמִמְשֶׁלֶת—Give the root and its meaning.—Write the plural, abs. and const. states.—Add to the plural the suffix of the 3rd. person, singular, masc.—Mark the tone and state the rule.

(*c*) תִּשְׁתַּחֲוֶה—What is the literal meaning of this word?—Give the Greek translation of the LXX.—Write the preter., 3rd person, sing. masc. of the same conjugation.

(*d*) שְׁלָמִיךָ—Distinguish between the *shelamim* and the *'oloth*.—Give the root.

(*e*) הִנַּפְתָּ—Conjugate the future Hiphil of this verb.

(*f*) וְתַחֲלָלָה—What are the meanings of this word?—Why is the characteristic dagesh omitted in the second radical letter?—Conjugate the preter. Piel of חָלַל.

(*g*) יִתְנַחֵם—State the renderings of this word.—Write the pret. Piel, 3rd person, singular, masc.

(*h*) אוֹלַת יָד —Explain the form תַ־ —What is the meaning of יָד in this expression?

(*i*) עִבְרִיּוֹ —Attach the grave suffixes to the sing. and plur. of this word.

3. Compare the Greek of Rom. XII. 19, and Deuter. 32, 35, שִׁלֵּם and ἀνταποδώσω).

4. Point, translate and explain the Masoretic Notes of Deuter. XXXII, verses 4, 18, 21, and the note at the end of Exodus.

5. What are the uses of the Hebrew future, with and without vav conversive?

6. Render into Hebrew :—Many are saying to my soul.—Blessed is the man who listens to the Lord.—The prophet said: Thy God reigneth.—He visited the iniquity of the inhabitants of the earth.—How fearful is war, and how good is peace!—We will learn the sacred tongue.

ADVANCED COURSE.

Examiners, { ....Rev. Prof. D. Coussirat, B.A., B.D., Officier. [d'Académie.
....Rev. James Awde, B.A.

1. Translate: (*a*) Isaiah, Chapter I. verses 5, 12.
(*b*) " " VII " 2, 11, 14.
(*c*) " " LIII " 3, 9.
(*d*) " " LV " 9, 13.
(*e*) Psalm XLII " 4, 7.
(*f*) " LV " 3, 19.
(*g*) " CIII " 15, 17, 18.

2. Parse the following words:

(*a*) תִּכּוּ —Explain the ־ִ. Write the pret. 3rd. person sing. masc., Niphal and Hiphil.

(*b*) לְרֹאוֹת —Write the full form of this word.—Give its literal translation.

(*c*) חֲצֵרֵי —Explain the change of ־ֵ into ־ֲ.—Write the constr. state sing., and the abs. state plural.

(*d*) נָחָה —Give its meaning when the tone is on the last syllable. State the rule.—Explain the Masoretic note attached to it.—What is the meaning of Ephraim?

(*e*) שְׁאֵלָה —What are the translations which have been given of this word?

(*f*) הָעַלְמָה —How has this word been rendered by the LXX, the Vulgate and Kimchi?—What is the usual Hebrew word for virgin?

(*g*) מוֹתָיו —Attach to the sing. a grave and a light suffix.

(*h*) עָלָה —Conjugate the pret. Hiphil.—Write in full, point and translate the Masoretic note of Isaiah LV. 13.

(*i*) כְּחָצִיר —Explain the ־.

(*j*) בְּרִית — Give the Greek and Latin translation.

3. Translate, with explanatory grammatical notes, the following :–

(*a*) כְּמַסְתֵּר.....מִמֶּנּוּ

(*b*) כְּלִי כֶסֶף

(*c*) גְּדֻלּוֹת —What is the gender used to express abstract ideas?

(*d*) לֵב וְלֵב

(*e*) הָאֱלֹהִים —Explain the use of the article. Account for the plural.

(*f*) הַיְאֹר

(*g*) פְּסִילֵיהֶם מִירוּשָׁלַם

(*y*) בִּשְׁנַת עֶשְׂרִים וְשֶׁבַע

4. Point and translate the final Masoretic note of the book of Psalms.

5. Render into Hebrew: Every day the righteous stand before the Lord and say the *Shema* (Deut. VI. 4).—I do not know.—I cannot bear.—Let thy servant speak.—Until he learn to refuse the evil and choose the good.

THE NEIL STEWART PRIZE.

TRANSLATION.

Examiners, {.....Rev. Prof. D. Coussirat, B.A., B.D., Officier d'Academie. .....Rev. James Awde, B.A.

1. Translate Genesis, Chapter X, verses 5, 8, 9, 10.

(*a*) Parse הַחֵל , נִפְרְדוּ .

(*b*) Give a paradigm of חָיָה , future Kal.

(*c*) What is the meaning of נִמְרֹד ?

(*d*) What is the usual name of the country called אֶרֶץ שִׁנְעָר ?

(*e*) Write an explanatory note on גִּבֹּר־צַיִד לִפְנֵי יְהוָה .

2. Translate Habakkuk, Chapter II, verses 4, 5, 6.

(*a*) Parse יָגוֹעַ , עֻפְלָה .

(*b*) Write in full, point and translate the Masoretic note attached to יִשְׂבָּע .

(*c*) Mark the accented syllable on יִשְׂרָה and give the rule.

(*d*) Give the root, fundamental meaning and Greek translation of אֱמוּנָה .

(*e*) Write an explanatory note on מְלֵיצָה and חִידוֹת .

(*f*) Give the root and precise meaning of עַבְטִיט .

(*g*) Explain the form וְיֹאמַר and its relation to יִשָּׂאוּ .

3. Translate Psalm V, verses 9 to 12, inclusive.

(*a*) Parse מָרְיָ and mark the accented syllable, giving the rule.

(*b*) Parse הַוְיַשֵּׁר and point the Keri of the Masorets.

(*c*) What is the force of the suffix in בְּפִיהוּ (verse 10) ?

(*d*) Translate into Hebrew : The Lord shall lead in his righteousness those that fear him and do not walk in the way of sinners.

4. State briefly the contents of the prophecy of Habakkuk.

THE NEIL STEWART PRIZE.

GRAMMAR.

Examiners, {....Rev. Prof. D. Coussirat, B.A., B.D., Officier [d'Academie. ....Rev. James Awde, B.A.

1. Describe the various sorts of dagesh forte.
2. Explain the syntax of numerals.
3. Give three instances of the feminine form of the Infinitive.
4. State the theory of the helping vowels.
5. What are the tenses and moods which stand for the Imperative?
6. Give four instances of Hebrew words accented *Milel*, and give the rule in each case.
7. Write a paradigm of one of the declensions of nouns as given by Gesenius.
8. How is the Optative expressed in Hebrew?
9. Write down two verbs doubly anomalous, and state the rules to which they are subject.
10. Give a paradigm, 3rd. person singular, masc., Kal, Niphal, Piel, and Hiphil, of a contracted verb.

CHALDEE.

Examiner, ...Rev. Prof. D. Coussirat, B.A., B.D., Officier [d'Academie.

1. Translate Daniel, chapter II, verses 9, 10, 11.

(*a*) Parse תְּהוֹדְעֻנַנִי.—Explain the ֻ under ע and the dagesh in נ.

(*b*) Write the 3rd. person, singular masc., future Peal and pret. Aphel of יְדַע.

(*c*) Write the masc. form of חֲדָתָה.

(*d*) Give the plural, abs. state of מִלָּה

(*e*) Write a paradigm of עִדָּן.

(*f*) Translate into Hebrew the following: עֲנוֹ , פִּשְׁרָה

מְדַרְהוֹן , לְהַחְוָיָה , אִיתַי

(*g*) Render the same words into Greek.

(*h*) Write in full, point and explain the Masoretic notes attached to Daniel, chap. II, verses 9, 10, 11.

2. Translate Daniel, chapter III, verses 28, 29, 30.

(*a*) Parse וְשֵׁזִיב—Is this word a quadriliteral?

(*b*) Parse גֵּ שְׁמֵיהוֹן —Write the vowels of the Chethib.

(*c*) Give a paradigm of future Peal of נפק

(*d*) Translate into Chaldee :—Thou shalt not worship any God except the God who made the Heavens and the Earth.

3. Point and translate into English the following :

ויען המלך ויאמר אל דניאל הישך יכול להודיעני החלום אשר ראיתי ופתרונו :

3. Translate into Chaldee the following :

Ἐστι γὰρ θεὸς ἡμῶν ἐν οὐρανοις, ᾧ ἡμεῖς λατρεύομεν, δυνατὸς ἐξελέσθαι ἡμᾶς ἐκ τῆς καμίνου του πυρὸς τῆς καιομένης, καὶ ἐκ τῶν χειρῶν σου βασιλεῦ ῥύσεται ἡμᾶς.

5. Characterize briefly the Targums of Onkelos and Jonathan.

CHEMISTRY AND THE NATURAL SCIENCES.

FIRST YEAR.

CHEMISTRY.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. What do you understand by the Periodic Law of the elements? Write down the first two periods.

2. What are the leading distinctions between metallic and non-metallic elements, and between inorganic and organic chemistry?

3. Name any of the metals which will float upon water, and describe one of them. Name any which have a specific gravity above twenty.

4. Give the principal differences (*a*) between the allotropic forms of Phosphorus and (*b*) between those of Carbon.

5. Discuss the nature of flame, and explain the principles involved in the construction of the Davy Lamp and Bunsen Burner.

6. Give the symbol, atomic weight and quantivalence of Carbon, Silicon, Chlorine, Phosphorus and Arsenic.

7. Distinguish between addition and substitution products, and between saturated and unsaturated compounds.

8. Name the principal series of Hydrocarbons. Give also the general formulæ and first member of each series.

9. What materials would you require in order to prepare each of the following compounds:—Carbonic Oxide, Phosphoretted Hydrogen, Alcohol, Caustic Potash, Dextrin?

10. Describe the spectroscope and explain it use.

INTERMEDIATE EXAMINATION.

BOTANY.

Examiner,.....D. P. PENHALLOW, B. Sc.

1. Distinguish between determinate and indeterminate inflorescence. Give example of each.

2. Give the component parts of the flower in their relation to
   (*a*) reproduction.
   (*b*) the axis.

3. Explain the structure and formation of the pollen grain.

4. Outline the principal methods of fertilization.

5. Show the application of the terms Protandry and Protogyny.

6. Give the leading characters of the Gymnosperms, and indicate their proper position in classification.

7. The embryo sac. state:—
   (*a*) Its functional character.
   (*b*) Its equivalent in Cryptogams.
   (*c*) Its product.

8. Show the alternation of generations in Filices.

THIRD YEAR, AND SECOND YEAR APPLIED SCIENCE.

ZOOLOGY (*In Part*).

Examiner,.....J. W. DAWSON, LL.D., F.R.S.

1. State the general characters of the *Protozoa*, and explain their arrangement in classes, with examples.

2. How would you distinguish an animal of the class *Anthozoa* from a Hydroid or a Polyzoon?

3. State the characters of the *Echinodermata*, as illustrated by any common animal of the class.

4. Name the classes of the *Mollusca*, and characterise two of them, with examples.

5. State the characteristic differences of *Annelida*, *Crustacea* and *Arachnida*.

6. State the distinctive characters of the class *Pisces*, and its division into orders.

7. Give the characters of the *Reptilia*, and the distinction between the Batrachians and Reptiles proper.

8. Characterise, and refer to their places in the system, any three of the following groups :—*Foraminifera*, *Pteropoda*, *Coleoptera*, *Ungulata*, *Asteroidea*, *Alcyonaria*, *Grallatores*, *Rodentia*.

9. Describe *Amphioxus* and its relations to other vertebrates.

10. Describe the nerve-system, circulatory and respiratory organs of a typical Insect.

11. State what you know of the specimens exhibited, and refer them to their Provinces and Classes.

B.A. ORDINARY EXAMINATION, AND THIRD YEAR APPLIED SCIENCE.

GEOLOGY.

Examiner,.....J. W. DAWSON, LL.D., F.R.S.

1. Describe the Middle and Upper Laurentian, stating their characteristic rocks, minerals, and fossils.

2. State in order the Siluro-Cambrian Formations represented in the vicinity of Montreal, with their local geographical distribution.

3. State the subdivisions of the Carboniferous in Nova Scotia, and their equivalents in Europe. State the characteristics of the Carboniferous Flora.

4. What are the more important Silurian limestones in Ontario, and what are their distinctive fossils.

5. State the geological relations of the following formations : Zechstein Wenlock, Caradoc, Ludlow,—and describe one of them, with its Canadian equivalents, if any.

6. Describe the Pleistocene deposits of Canada and Western Europe, and explain the various theoretical views as to the climate which they indicate.

7. State the subdivisions of the Tertiary in France, and their supposed equivalents in England and America.

8. What Geological formations are represented between Lake Superior and the Rocky Mountains. Describe one of them with its fossils and useful minerals.

9. Give in a tabular form the Geological and Zoological or Botanical relations of *Ammonites*, *Phacops*, *Dendrerpeton*, *Cephalaspis*, *Columnaria*, *Brontotherium*, *Megalosaurus*, *Nummulites*.

10. What are the methods of proceeding and what the principal facts to be observed in beginning a survey of an unknown district.

11. State the geological formations to which the fossils exhibited belong, and name the fossils.

B.A. ORDINARY.

MINERALOGY AND LITHOLOGY.

Examiners,..... { Sir J. W. Dawson, LL.D., F.R.S.
B. J. Harrington, B.A., Ph.D.

1. By what simple tests may the ores of Iron be distinguished?

2. State what you know with regard to Lignite and its occurrence in Canada.

3. Describe the Jolly balance, and explain its use in determining the specific gravity of minerals.

4. Explain the distinctions between wholly crystalline, semi-crystalline, glassy and clastic Rocks.

5. What are some of the principal characteristics of Volcanic rocks; Name the more important rocks of this group, and describe two of them.

6. Describe the principal varieties of Granite. A distinction has been made between exotic and endogenous Granites. Explain it.

7. What do you understand by perlitic, spherulitic, and porphyritic structures?

8. How is it possible in many instances to ascertain what minerals are present in rocks which are so fine grained as to appear homogeneous to the eye?

9. Describe each of the following rocks briefly, and state what you know with regard to their origin:—Gneiss, Diorite, Syenite, Sandstone, Quartzite, Fire-clay.

10. Describe carefully each of the rocks exhibited, and state what you know concerning their geological relations.

THIRD YEAR ADDITIONAL.

CHEMISTRY.

(Answer only ten questions.)

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Explain the use of the asbestos thread and the charcoal splinter in the detection of metals.

2. What takes place when Chlorides are heated with Manganese Dioxide and Sulphuric Acid? Give the equation and the quantities of the materials which take part in the reaction.

3. How many litres of Carbonic Oxide can be made from 100 grammes of crystallized Oxalic Acid?

4. Give equations indicating the changes which take place in any two of the following cases:—(1) When Hydric Sulphide is added to a solution of Ferric Chloride. (2) When Ammonium Sulphide is added to a solution of Aluminium Sulphate. (3) When Arsenious Sulphide is dissolved in Ammonium Sulphide. (4) When a solution of Barium Chloride is added to one of Hydro-disodium Phosphate.

5. What is the action of Ammonia upon Mercurous Chloride? Give the equation

6. How much Nitric Acid can be made from 50 grammes of Potassium Nitrate? How much from the same quantity of Sodium Nitrate? How much Sulphuric Acid would be required in each case?

7. Name the metals of the Third Group and describe their separation.

8. What metals are thrown down from aqueous solutions (*a*) by Hydrochloric Acid, and (*b*) by Sulphuric Acid?

9. Give the formulæ of the following substances:—Chromium Oxychloride, Lead Chromate, Boric Acid, Ammonium Oxalate, Silver Arsenite, Potassium Ferricyanide.

10. How would you distinguish Brucine from Morphine, and Quinine from Cinchonine?

11. State what you know with regard to the chemical characters of Grape Sugar and Casein.

12. Name the principal inorganic acids which are precipitated (*a*) by Barium Chloride, and (*b*) by Silver Nitrate.

13. A solution contains the chlorides of Antimony, Bismuth, Manganese, Barium, Magnesium and Potassium. Describe its qualitative analysis.

THIRD YEAR ADDITIONAL.

CHEMISTRY.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. Describe Victor and Carl Meyer's method for the determination o vapour densities.

2. What substances are formed when a mixture of Bromobenzine and Iodomethane is acted upon by metallic Sodium? Give the equation.

3. The simplest formula for Acetic Acid based upon the results of analysis is CH_2O. For what reasons is this formula commonly doubled?

4. State what you know with regard to the constitution of basic salts.

5. When Primary, Secondary and Tertiary Alcohols are respectively subjected to the influence of oxydising agents, what changes do they undergo?

6. How many litres of Nitric Oxide will be evolved if 80 grammes of copper are dissolved in nitric acid?

7. Into what classes may chemical reactions be divided? Give examples of each.

8. Explain the significance of the three following formulæ:—

$$C_3H_5OH \qquad C_2H_5COH \qquad CO.(CH_3)_2$$

9. Give the formulæ of the following compounds:—Amidogen, Phenylamine, Methyl Carbinol, Amylic Alcohol, Triforamide, Paraldehyde.

10. The density of Sulphur vapour is three times as great at 500° as at 1000°. What inference would you draw from this?

THIRD YEAR HONOURS.

(I.) MINERALOGY.

Examiners,..... { SIR J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, Ph.D., F.G.S.

1. Distinguish between hemiholohedral and holohemihedral forms, giving examples.

2. State fully what is the cause of the brilliancy of such minerals as the Diamond, Anglesite and Sphalerite.

3. Explain the distinction between uniaxial and biaxial crystals. Give also the significance of the terms acute bisectrix, obtuse bisectrix, and optic axial plane.

4. What are the different methods of twinning in Orthoclase? Describe each fully.

5. Explain the use of dense solutions in the determination of specific gravities, and give the composition of Rohrbach's solution.

6. What are the leading characteristics of the Triclinic System of Crystallography. Explain the notation of the faces.

7. Enumerate the principal hemihedral forms of the Isometric System, and give their symbols.

8. What is a sphenoid, a scalenohedron, a hemidome, a clinopinacoid, a gyroidal form?

9. Explain polymorphism and isomorphism and give several examples of each.

10. What are pseudomorphs, and in what ways are they produced?

11. Describe fully each of the specimens exhibited.

(II.) DETERMINATIVE MINERALOGY.

Afternoon, 2 to 5.

This examination will be held in the Chemical Laboratory.

(III.) BLOWPIPE ANALYSIS AND DETERMINATIVE MINERALOGY.

Examiner,..... .....B. J. HARRINGTON, B.A., Ph.D.

1. Explain the uses of the following reagents in blowpipe analysis :— Potassium Cyanide, Potassium Iodide, Cupric Oxide, Calcium Fluoride, Magnesium.

2. Describe the operation of roasting a mineral. What is its object?

3. In the absence of coal-gas what fuels are best adapted for blowpipe work?

4. State what takes place on heating each of the following substances in a closed tube :—Pyrolusite, Cinnabar, Arsenopyrite, Siderite, Fluorite, Tellurium.

5. What minerals constitute the scale of fusibility? Describe the manner of using the scale?

6. Give blowpipe tests for the detection of (*a*) Boron, (*b*) Fluorine, (*c*) Chlorine, (*d*) Sulphur, in Silicates.

7. How would you determine the specific gravity of a mineral (*a*) with the specific gravity bottle, (*b*) with Nicholson's hydrometer, (*c*) with Walker's balance?

8. By what simple tests would you distinguish Jamesonite from Stibnite, Chalcocite from Tetrahedrite, Molybdenite from Graphite, and Cassiterite from Rutile?

9. What are the blowpipe characters of the following minerals: Stilbite, Orthoclase, Tourmaline, Sphalerite, Menaccanite?

10. Explain the terms decrepitation, intumescence, gelatinization, deflagration.

B.A. HONOUR EXAMINATIONS.

(I.) LITHOLOGY (including Microscopic Characters of Minerals.)

Examiners,..... { Sir J. W. Dawson, LL.D., F.R.S.
B. J. Harrington, B.A., Ph.D.

1. Name the principal rock-forming minerals, and state into what groups they may be divided.

2. What are the optical characters, (*a*) of Hexagonal and (*b*) of Monoclinic minerals as studied in their sections with the polarization microscope?

3. Give the microscopic characters of Nepheline, Olivine and Microcline. In what rocks do these minerals occur?

4. Muscovite and Biotite are present in the same rock-section. How would you distinguish them?

5. If Quartz and Sanidine were present in the same rock-section, how would you distinguish them?

6. Explain the terms Micro-crystalline, Crypto-crystalline, Microfelsitic.

7. How would you distinguish (*a*) Diabase from Diorite, (*b*) Trachyte from Liparite.

8. What are principal characteristics of the so-called Vitreous rocks?

9. Melaphyre, Porphyrite, Norite. State what you know with regard to the characteristics and mode of occurrence of these rocks.

10. Describe Quartzite, Argillite and Mica schist, and discuss their origin.

11. Discuss the question of Rock-classification, pointing out the chief difficulties which have to be encountered in all attempts to group rocks in a natural way.

12. Name and describe the specimens exhibited.

(II.) PRACTICAL GEOLOGY.

Examiners,..... { J. W. Dawson, LL.D., F.R.S.
B. J. Harrington, B.A., Ph.D.

1. Explain the manner of indicating geological observations in general maps and sections. Illustrate by an ideal map and section.

2. Explain the various ways in which mineral veins may change in character in descending into the earth, and the causes of such changes.

3. What are the best means for ascertaining the existence and effects of Faults?

4. In examining any rock section or exposure, what are the instruments to be used and facts to be recorded?

5. A formation containing *Productus, Fenestella, Phillipsia*, rests unconformably upon one holding *Dikellocephalus, Diplograpsus*, or *Paradoxides*, what may be inferred as to relative ages and intervening time?

6. Trace any of the following groups upward in geological time from its origin to its extinction, so far as known, and state its representative genera in each system of formations.

(a) Trilobites, (b) Ammonitidæ, (c) Tabulata, (d) Cystidea, (e) Orthidæ.

7. What are the different modes of occurrence of Igneous Rocks? How may these be distinguished and their relative ages ascertained?

8. Explain the modes of occurrence of Mineral Veins, and classify them in accordance therewith.

9. State some of the difficulties attending the study of contorted and overturned rocks, and the methods of dealing with them.

10. State the characteristic parts and method of description of an Orthoceras, a Rugose Coral and a Ganoid Fish.

11. How would you distinguish the following genera of Fossil Plants, Lepidodendron, Calamites, Neuropteris, Sigillaria.

12. In what formations do you find the first specimens of the following groups, and under what generic forms:

(a) Echinoidea, (b) Orthoceratidæ, (c) Insecta, (d) Decapoda, (e) Filices.

(III.) GEOLOGY AND PALÆONTOLOGY. (*In Part.*)

Examiners, ... J. W. DAWSON, LL.D., F.R.S. / B. J. HARRINGTON, B.A., Ph.D.

1. Trace the Southern boundary of the Laurentian in Quebec and Ontario, and mention the formations with which it is in contact.

2. State the stratigraphical relations of the Huronian to the Laurentian and to overlying formations in the Lake Huron District and in Newfoundland, and mention the useful minerals of the Huronian in those districts.

3. State in tabular form the general succession of stratified rocks in the Eozoic or Archæan districts of Canada.

4. Enumerate the characteristic fossils of the Acadian Group in New Brunswick. Mention the equivalents of that Group elsewhere in America and in Europe.

5. Give in a tabular form the series of Lower Silurian rocks in the Province of Quebec, with their European equivalents, and mention the special points of interest connected with the Quebec group of Logan.

6. State the mineral character, characteristic fossils and conditions of deposit of the formations seen in Ontario on a line of section from the Laurentian on the N.E., south-westward.

7. Describe the following formations, and indicate the special points of interest attaching to them and their fossils:—Anticosti Group, Gaspé Sandstones, Gypsiferous formation of Nova Scotia, Permo-carboniferous of Prince Edward Island.

8. Explain the connection of Underclays, Ironstones and Shelly Bituminous Limestones with Coal Beds.

9. Enumerate, under their Zoological Groups, the characteristic fossils of the Niagara Limestone and Corniferous Limestone.

10. In what formations in Canada do the following genera occur, and what is their precise range in geological time: *Calamites, Chonetes, Productus, Eurypterus, Conocoryphe, Trinucleus, Cephalaspis, Dictyonema, Orthis, Psilophyton, Hyolithes?*

EXAMINATION IN SPECIMENS.

(2 TO 5 P.M.)

Refer the specimens exhibited to their geological formations, and to their places in the Zoological and Botanical classifications.

(IV.) GEOLOGY AND PALÆONTOLOGY. (*In Part.*)

Examiners, ... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., Ph.D.

1. State the reasons for and against the theories of Land and Marine Glaciation, as applied to the Boulder Clay.

2. What is the present state of knowledge respecting the relations of the Triassic, Cretaceous and Tertiary Floras, with respect to their general resemblances and differences, and in comparison with modern plants?

3. In what formations and under what generic forms do the following groups first appear:—*Reptilia, Marsupialia, Myriapoda, Crocodilia, Aves, Belemnitidæ?*

4. Tabulate the Mesozoic Formations of England, and state their equivalents in Canada, as far as known.

5. State fully the geological and zoological or botanical relations of the following fossils: *Microlestes, Ventriculites, Gryphea, Mosasaurus, Beryx, Nummulites.*

6. State the geological age and characteristic fossils of the following formations:—Laramie, Niobrara, Leda Clay.

7. Sketch the distribution of the Mesozoic and Tertiary on the line of the Canada Pacific Railway.

8. Describe the Trias of Nova Scotia and Prince Edward Island, its distribution and the associated Trappean Rocks.

9. What evidences are there in Canada of foldings and flexures of the earth's crust later than the Carboniferous Period?

10. In what localities and in what formations do Coal and Iron ore of Mesozoic or later date occur in Canada?

EXAMINATION IN SPECIMENS.

11. Catalogue the Fossils contained in the specimens exhibited, and refer them to their respective Geological Formations.

(V.) MINERALOGY.

Examiners, ... { Sir J. W. Dawson, LL.D., F.R.S.
B. J. Harrington, Ph.D., F.G.S.

1. Give a synopsis of the principal hexagonal forms with their symbols.

2. Distinguish (*a*) between inclined and parallel hemihedrons, (*b*) between vertically direct and vertically alternate hemihedrons, and (*c*) between pyramids of the first, second and third orders in the tetragonal system.

3. Two minerals (*a* and *b*) gave on analysis the following results. Calculate their formulæ and give their names:—

	a	*b*
Silica	40.2	42.9
Alumina	22.6	37.0
Lime	37.2	20.1
	100.0	100.0

4. Name the principal tetragonal Silicates, and describe two of them.

5. What are the forms exhibited by crystals of Canadian Apatite?

6. Give in tabular form the names and distinguishing characters of the principal Zeolites.

7. Characterise each of the following substances briefly, and state to what species they belong :—Leucoxene, Colophonite, Essonite, Piedmontite, Bronzite, Cummingtonite, Picotite, Freibergite.

8. State what you know with regard to the lustre and cleavage of each of the following minerals :—Stibnite, Sphalerite, Diamond, Orthoclase Pyroxene, Topaz, Gypsum, Halite.

9. Give the crystalline form, hardness, and specific gravity of Nephelite, Prehnite, Chrysolite, Arsenopyrite, Cinnabar, Proustite.

10. What are the blowpipe characters of Molybdenite, Pyrargyrite, Zincite, Wollastonite, Beryl, Lepidolite, Pyromorphite and Malachite ?

SPECIMENS.—Afternoon, 2 to 4.

Name and describe the specimens exhibited. State also what you know with regard to their geological relations.

FACUTY OF APPLIED SCIENCE.

Entrance, Prize and Exhibition Examinations.

FIRST YEAR MATRICULATION.

MATHEMATICS.

Examiner,.....G. H. CHANDLER, M.A.

1. What is the simple interest on $103.45 from May 13th to September 16th, inclusive, at $7\frac{1}{2}$ per cent. per annum?

2. A gallon of water contains 277.2 cubic inches and weighs 10 lbs. Find in ounces the weight of a cubic foot of water.

3. Find the square root of 290·324.

4. Divide $x^4 + y^4 - z^4 + 2x^2y^2 - 2z^2 - 1$ by $x^2 + y^2 - z^2 - 1$.

5. Reduce $\frac{x^3 + 3x^2 - 4}{x^3 - 1}$ to its lowest terms.

6. Find the value of $\frac{x+y}{y} - \frac{2x}{x+y} + \frac{x^2y - x^3}{x^2y - y^3}$

7. Find x from the equations

$$\frac{2x+3}{4} + \frac{4x}{3} = \frac{1}{x} + \frac{6x+2}{3} - \frac{x+1}{6},$$

$$\frac{1}{ab - ax} + \frac{1}{bc - bx} = \frac{1}{ac - ax}.$$

8. Any two sides of a triangle are together greater than the third side.

9. Parallelograms on equal bases and between the same parallels are equal in area.

10. If a straight line be divided into two equal and also into two unequal parts, the squares on the two unequal parts are together double of the square on half the line and of the square on the line between the points of section.

11. The angle at the centre of a circle is double of the angle at the circumference standing on the same arc.

SECOND YEAR MATRICULATION.

MATHEMATICS (FIRST PAPER).

Examiner, ...G. H. CHANDLER, M.A.

1. If 10 square chains make an acre, find in inches the length of one chain.

2. Reduce to its simplest form:

$$\left(\frac{3x^2-4ax+a^2}{a^2-x^2}-\frac{a-x}{a+x}\right)\times\left(\frac{a^2+2ax+x^2}{2x}\right).$$

3. Solve the equations:

$$\frac{5x}{x+4}-\frac{3x-2}{2x-3}=2,$$

$$\frac{x}{a+x}=\frac{a+x}{x}-\frac{2a-b}{2x}.$$

4. Solve the simultaneous equations:

$$\left.\begin{aligned}2x^2+3y^2-5&=o\\2x+3y+1&=o\end{aligned}\right\},$$

$$\left.\begin{aligned}x^2y&=48\\xy^2&=36\end{aligned}\right\}.$$

5. Show that:

$$\left\{a^2+(a^2b)^{\frac{2}{3}}\right\}^{\frac{1}{2}}+\left\{b^2+(ab^2)\right\}^{\frac{1}{2}}=\left\{a^{\frac{2}{3}}+b^{\frac{2}{3}}\right\}^{\frac{3}{2}}.$$

6. In every triangle, the square on the side subtending an acute angle is less than the squares on the sides containing that angle, by twice the rectangle contained by either of these sides and the straight line intercepted between the perpendicular let fall on it from the opposite angle and the acute angle.

7. If two straight lines in a circle cut one another the rectangle contained by the segments of the one is equal to the rectangle contained by the segments of the other.

If one of the lines bisects the other, the difference of their squares is equal to the square on the difference of the segments of the bisecting line.

8. Describe a circle about a given regular pentagon.

9. If two triangles have one angle of the one equal to one angle of the other, and the sides about the equal angles proportionals, the triangles shall be similar.

10. Parallelograms about the diagonal of any parallelogram are similar to each other and to the whole parallelogram.

11. If two straight lines be parallel, and one of them be at right angles to a plane, the other also shall be at right angles to the same plane.

SECOND YEAR MATRICULATION.

MATHEMATICS (SECOND PAPER).

Examiner, ... G. H. CHANDLER, M.A.

1. Show that

(1) $\dfrac{\operatorname{cosec} A}{\sec A} + \dfrac{\sec A}{\operatorname{cosec} A} = \sec A \operatorname{cosec} A$,

(2) $(\operatorname{cosec} A - \cot A)^2 = \dfrac{1 - \cos A}{1 + \cos A} = \tan^2 \dfrac{A}{2}$,

(3) $\dfrac{\sin (A + B)}{\sin A + \sin B} = \dfrac{\cos \dfrac{A + B}{2}}{\cos \dfrac{A - B}{2}}$

2. In any triangle $\sin \dfrac{A}{2} = \sqrt{\dfrac{(s-b)(s-c)}{b\,c}}$

3. Solve the triangles in which

$\begin{cases} c = 897.3 \\ A = 31° 21' 6'' \\ C = 90° \end{cases}$ $\begin{cases} a = 831 \\ b = 536 \\ C = 16° 28' 40'' \end{cases}$ $\begin{cases} a = 1000 \\ B = 120° 15' 15'' \\ C = 36° 52' \end{cases}$

4. From each of two ships a mile apart the angle which is subtended by the other ship and a beacon on shore is observed: these angles are 55° and 62° 30'. What are the distances of the ship from the beacon?

5. A flag-staff 20 feet high stands on a wall 40 feet high. At a point on a level with the bottom of the wall the flag staff subtends an angle of 10°. Find the distance of the point from the wall.

EXHIBITION AND PRIZE EXAMINATIONS.

MATHEMATICS.

Examiner, ... G. H. CHANDLER, M.A.

1. Define a logarithm. Prove the rule for multiplying by means of logarithms. What is the modulus of the common system of logarithms, and how is it used?

2. In any triangle

(1). $\cos \dfrac{A}{2} = \sqrt{\dfrac{s\,(s-a)}{b\,c}}$,

(2). $\sin 2A + \sin 2B + \sin 2C = 4 \sin A \sin B \sin C$,

(3). The area $= \sqrt{s(s-a)(s-b)(s-c)}$.

3. Show that

(1). $\tan A + \cot A = 2 \operatorname{cosec} 2A$,

(2). $\dfrac{\sin A + \sin B}{\cos A + \cos B} = \tan\left(\dfrac{A+B}{2}\right)$

(3). $\sin 18° = \dfrac{\sqrt{5}-1}{4}$

4. Find the equation of a straight line in terms of its intercepts on the axes.

5. Find the equation of the straight line which joins the intersection of $y - 7x - 3 = 0$ and $5x - 3y + 2 = 0$, with the intersection of $4x + 5y - 12 = 0$ and $8x + 6y - 4 = 0$. What angles does the line make with the axes?

6. Find the points of intersection of the line $y = \lambda x + b$ with the circle $x^2 + y^2 = a^2$; and hence deduce the condition that the line may be a tangent.

7. Prove analytically that the angle in a semi-circle is a right angle.

8. Find the equation of the tangent and normal at any point of a parabola.

9. Explain the meaning of a differential, and investigate the formulæ $d(uv) = u\,dv + v\,du$, $d(\sin x) = \cos x\,dx$, $d(\tan^{-1} x) = \dfrac{dx}{1+x}$

10. Differentiate $\tan^{-1}\left(\dfrac{2x}{1-x^2}\right)$, x^x, $\log\left(\tan\dfrac{x}{2}\right)$.

11. Integrate $\dfrac{x\,dx}{1+x^4}$, $\dfrac{2x\,dx}{\sqrt{1-x^4}}$, $\dfrac{x^2\,dx}{a^3 - x^3}$.

12. Find the maximum parabola which can be inscribed in a given isosceles triangle.

SCOTT EXHIBITION.

MECHANISM.

Examiner, ... C. H. McLeod, Ma. E.

1. Obtain an expression for the ratio of the velocities of the ends P and Q of a connecting rod.

(*a*) Show how the relative velocities of P and Q may be set out in a diagram.

2. What do you understand by "centre of oscillation?"

(*a*) Describe two experimental methods by which its position may be ascertained.

3. In a Watts parallel motion the centres are on the same side of the link. The rods are 20 and 30 in. and the link 25 in. long, find the "parallel point," and apply the pantograph to find a second "parallel point."

(*a*) Prove the parallelism of the paths of the "parallel points."

4. A pinion drives a rack. Put pin wheels on one and construct two of the teeth of the other piece.

5. Describe the construction and action of (*a*) the detached lever escapement, (*b*) the reversing gear of a locomotive engine, (*c*) the going fusee, employed to keep clocks going while they are being wound up.

SESSIONAL EXAMINATIONS, 1886.

FIRST YEAR.

GEOMETRY.

Examiner,.....G. H. CHANDLER, M.A

1. In every triangle, the square on the side subtending an acute angle is less than the squares on the sides containing it, by twice the rectangle contained by either of these sides and the line intercepted between the perpendicular let fall on it from the opposite angle, and the acute angle.

2. A segment of a circle being given, complete the circle.

3. If the exterior vertical angle of a triangle be bisected by a straight line which cuts the base externally, the segments of the base shall have the same ratio as that of the sides.

4. Equal parallelograms which have an angle of the one equal to an angle of the other, have their sides about the equal angles reciprocally proportional.

5. Show how a rectilineal figure may be made so that it shall be similar to one given rectilineal figure and equal to another.

6. Given the base and the sum of the squares on the sides of a triangle, find the locus of the vertex.

7. Define an ellipse. What are the foci? Given the major axis of an ellipse and the vertex of the cone, find the foci.

8. The subnormal of a parabola is constant, and the subtangent is twice the abscissa.

9. The locus of the foot of the perpendicular from the focus of a parabola on the tangent is the tangent at the vertex.

10. A segment of a parabola cut off by a chord is equal to two-thirds of the circumscribed triangle.

FIRST YEAR.

TRIGONOMETRY (First Paper)—ALGEBRA.

Examiner,.....G. H. CHANDLER, M.A.

1. Name the quadrants in which the sine, tangent and secant, respectively, are *plus*.

2. How may radians be converted into degrees? Prove the rule.

3. Given $\tan A = 2.6$, find $\sin A$, $\cos A$, &c.

4. Prove the relations between the functions of an angle and those of its supplement.

5. Show that

(1) $\tan A + \cot A = \sec A \operatorname{cosec} A$.

(2) $\tan^2 A - \sin^2 A = \tan^2 A \sin^2 A$.

(3) $\tan A + \tan B = \dfrac{\sin (A + B)}{\cos A \cos B}$,

(4) $\dfrac{\sin (A + B)}{\sin A - \sin B} = \dfrac{\sin\left(\dfrac{A+B}{2}\right)}{\sin\left(\dfrac{A-B}{2}\right)}$,

(5) $\sin A + \cos A = \sqrt{2} \sin (45^\circ + A)$.

6. Prove that

(1) $\tan (A + B) = \dfrac{\tan A + \tan B}{1 - \tan A \tan B}$,

(2) $\cos A = 2\cos\dfrac{A}{2} - 1 = 1 - 2\sin\dfrac{^2A}{2}$,

(3) $\dfrac{1 + \sin A}{1 + \cos A} = \frac{1}{2}\left(1 + \tan\dfrac{A}{2}\right)^2$.

7. Shew that $\sqrt{128} - 2\sqrt{50} + \sqrt{72} - \sqrt{18} = \sqrt{2}$, and that $\sqrt{24} \times \sqrt[3]{18} \times \sqrt[6]{24} = 12\sqrt[12]{72}$.

8. Reduce the fractions $\dfrac{a^2 - ab - 2b^2}{a^2 - 3ab + 2b^2}$ and $\dfrac{x^3 - 3x + 2}{x^3 + 4x^2 - 5}$ to their lowest terms.

9. Find the square root of $4 - 12a + 5a^2 + 14a^3 - 11a^4 - 4a^5 + 4a^6$.

10. Solve the equations—

$$(1)\quad \left\{\begin{array}{l} x\,y = x + y \\ y\,z = 2\,(y + z) \\ z\,x = 3\,(z + x) \end{array}\right\},$$

$$(2)\quad \frac{x}{x+1} + \frac{x+1}{x} = \frac{13}{6},$$

$$(3)\quad \frac{2\,x}{x-4} + \frac{2\,x-5}{x-3} = \frac{25}{3}.$$

11. The difference between the hypotenuse and the other two sides of a right-angled triangle is 3 and 6; find the three sides of the triangle.

FIRST YEAR.

TRIGONOMETRY (*Second Paper*).

Examiner,.....G. H. CHANDLER, M.A.

1. In every triangle

$$\tan\frac{A-B}{2} = \frac{a-b}{a+b}\cot\frac{C}{2}.$$

2. The radius of the circumscribed circle is

$$\frac{a\,b\,c}{4\sqrt{s\,(s-a)\,(s-b)\,(s-c)}}.$$

3. Solve the triangles in which

(1) $a = 520$, $A = 66^\circ\,2'\,52''$, $C = 90^\circ$;
(2) $a = 241$, $b = 169$, $C = 15^\circ\,22'\,37''$;
(3) $a = 1000$, $B = 120^\circ\,15'\,15''$, $C = 36^\circ\,52'$.

4. The angle of elevation of a tower 100 feet high, due north of an observer was 50°; what will be its angle of elevation after the observer has walked due east 300 feet?

5. A headland C bore due north of a ship at A, and after the ship had sailed 10 miles due east to B the headland bore north-west; what was the distance of the headland from A and B?

SECOND YEAR.

MECHANICS.

Examiner,.....G. H. CHANDLER, M.A.

1. Explain the distinction between absolute and gravitational units in mechanics.

2. Two bodies, weighing 12 and 16 pounds respectively, hang by a string over a smooth pulley; how far will they move in the first second?

3. Find the conditions of equilibrium of any number of forces acting in one plane upon different points of a rigid body.

4. The angle of inclination of a plane is 20°, and the co-efficient of friction is $\frac{1}{6}$; find the direction and magnitude of the least force which will drag a body weighing 20 pounds up the plane.

5. A body having a spherical base is placed upon the top of a sphere; the centre of gravity of the body is at a distance h from the lowest point; show that the equilibrium will be stable if the reciprocal of h is greater than the sum of the reciprocals of the two radii.

6. What weight can be raised by a force of 50 lbs. applied perpendicularly at the end of a lever 5 feet long, to a vertical screw of 2 inches radius and one inch pitch, the co-efficient of friction being ·08?

7. Give the rule for obtaining the total pressure of a liquid on any surface.

8. Explain the general method of finding centres of pressure by geometry. Find the centre of pressure of a triangle having one side in the surface of the liquid.

9. Explain the weighings which are required, and obtain the formula for the specific gravity of a solid which will not sink in water.

10. The rim of a fly-wheel weighs 300 lbs, and its diameter is 4 ft; how much kinetic energy does it contain when it makes 500 revolutions per minute?

SECOND YEAR.

CALCULUS.

Examiner, ... G. H. CHANDLER, M.A.

1. Prove the formulæ for differentiating $\tan x$ and $\tan^{-1} x$, respectively.

2. Show that—

(1) $d\left(\frac{x}{1+x}\right)^n = \frac{n\,x^{n-1}\,dx}{(1+x)^{n+1}}$,

(2) $d\left[(1+x)\sqrt{1-x}\right] = \frac{(1-3x)\,dx}{2\sqrt{1-x}}$,

(3) $d\left(\frac{\sin x}{1+\tan x}\right) = \frac{(\cos^3 x - \sin^3 x)\,dx}{(\cos x + \sin x)^2}$,

(4) $d(\sin n x \sin^n x) = \sin^{n-1} x \sin(n+1)x\,dx$.

3. Find the first two terms, viz., $x + \frac{1}{3}x^3$, of the expansion of $\tan x$.

4. Show that the tangent to the curve $(a-x)^2 y = a^2 x$, is parallel to the axis of x when $x = -a$, perpendicular to it when $x = a$, and that the tangent at the origin bisects the angle between the axes.

5. Explain the geometrical meaning of d^2y, and hence deduce the condition for a point of inflexion.

6. Prove that the rectangle of given perimeter and maximum area is a square.

7. Find the maximum cylinder which can be cut from a given cone.

8. Find the value of $\int_0^{\frac{\pi}{4}} \cos 2x\, dx$, $\int_1^2 \frac{dx}{1+x}$, and $\int_0^1 (3x^3 - x + 1)dx$.

9. Show that—

(1) $\int \frac{x\, dx}{1+x^4} = \frac{1}{2} \tan^{-1} x^2$,

(2) $\int \frac{dx}{\cos^2 \frac{x}{2}} = 2 \tan \frac{x}{2}$,

(3) $\int x^3 \sqrt{7 + 3x^4}\, dx = \frac{1}{18} (7 + 3x^4)^{\frac{3}{2}}$

10. Find the area of the curve $y = 2x^3 - x$ between the limits $x = 1$ and $x = 2$; also, the centre of gravity of this area.

SECOND YEAR.

ANALYTIC GEOMETRY.

Examiner,.....G. H. CHANDLER, M.A.

1. In how many points do the curves $x^2 + y^2 = 25$, and $y^2 = 4x$ intersect? Find the co-ordinates of the points.

2. The co-ordinates of the vertices of a triangle are (2, 1), (3,—2) (—4,—1); find the equations of the medial lines of the triangle, and show that they meet in a point.

3. How far is the vertex (2, 1) from the opposite side? What is the length of that side? Hence calculate the area of the triangle, and verify your result by substituting in the formula for the area of a triangle.

4. Find the centre and area of the circle $x^2 + y^2 - 6x - 14y = 2$.

5. Find the equations of the tangents from the point (7, 1) to the circle $x^2 + y^2 = 25$.

6. Transform the equation $xy = 3$ to axes which bisect the angles between the given axes.

7. Show that the locus of a point, the square of whose distance from a fixed point is proportional to its distance from a fixed line, is a circle.

8. Find the eccentricity, latus rectum, and area of the ellipse $16x^2 + 25y^2 = 1600$.

9. Prove that the tangent at any point of a parabola meets the directrix and latus rectum produced at points equally distant from the focus.

10. Show that the distance of either focus of a hyperbola from an asymptote is equal to half the conjugate axis.

THIRD YEAR.

MECHANICS.

Examiner,.....G. H. CHANDLER, M.A.

1. Shew that when a belt is on the point of slipping on a pulley the Napierian logarithm of the ratio of the tensions on the two sides is $\mu\phi$ where μ is the co-efficient of friction and ϕ the angle at the centre subtended by the part of the belt in contact with the pulley.

2. A cylinder 3 inches in diameter and 5 inches long stands on a plane the inclination of which is gradually increased. How will the cylinder begin to move, the co-efficient of friction being ·63?

3. Show how the centre of gravity of 4 bodies of equal weight placed anywhere in space may be found.

4. By what weighings may the specific gravity of a body be found, (*i*) when the body sinks in water, (*ii*) when it floats.

5. Explain the construction and working of a Bourdon pressure gauge.

6. A vessel contains a quantity of air which weighs 8 grains, and exerts a pressure of $16\frac{1}{2}$ lbs. per square inch; 3 grains more of air at the same pressure and temperature are introduced into the vessel, what is the new pressure.

7. What will the pressure be if the temperature be raised from 3 to 10 degrees Fah?

8. Describe Sprengel's air-pump.

9. A body is projected down an inclined plane with a velocity acquired in falling down its height, and describes the length of the plane in the time of falling down its height. Find the angle of elevation of the plane.

10. Show that the surface of a liquid rotating about a vertical axis is a paraboloid of revolution. Show that the liquid rises as much at the outside as it sinks in the middle.

THIRD YEAR.

SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY.

Examiner, ...G. H. CHANDLER, M.A.

1. Assuming Napier's Rules, show that in a right-angled spherical triangle:

$$\sin A = \frac{\sin a}{\sin c}, \quad \cos A = \frac{\tan b}{\tan c}, \quad \tan A = \frac{\tan a}{\sin b}.$$

2. What is meant by the polar triangle?

Show that the sum of the angles of a spherical triangle lies between two and six right angles.

3. In any spherical triangle

$$\cos a = \cos b \cos c + \sin b \sin c \cos A.$$

4. If the sun is observed to cross the meridian of Montreal at 0h. 6m. 2.21s. on March 25th, 1886, what is the error of the clock?

5. What is meant by parallax, and what by the augmentation of the moon's diameter?

6. How may the meridian altitude of an object be used in finding the latitude of the place of observation?

7. Find the altitude and parallax of the moon when it culminates here to-day (latitude 45° 30′ 17″).

8. Find the sidereal time when 51 Cephei (Nautical Almanac, p. 314) will be at its greatest western elongation to-day.

9. Explain clearly the method of determining difference of longitude by means of the electric telegraph.

THIRD YEAR.

MATHEMATICS (ADVANCED).

Examiner,.....G. H. CHANDLER, M.A.

1. What are conjugate diameters of an ellipse? Write down the equation of the diameter conjugate to that passing through a given point on the ellipse.

2. Prove that the tangents to conjugate hyperbolas at the extremities of conjugate diameters intersect on the asymptotes.

3. A line of constant length moves with its extremities on two straight lines at right angles to each other; show that the locus of a given point in the moving line is an ellipse with the segments of the line for semi-axes.

4. Find a formula for the radius of curvature of a given curve.

5. The radius of curvature at a point on an ellipse $= \frac{b_1{}^3}{a\,b}$, where b_1 is the semi-diameter conjugate to that passing through the given point.

6. Prove that the evolute of a logarithmic spiral is also a logarithmic spiral.

7. Given in position the sides of a right-angled triangle and one point in the hypotenuse, how should the triangle be completed so that the area may be a minimum ?

8. Integrate $(x + \sqrt{x+2} + \sqrt[3]{x+2})\ dx$, $\sqrt{a^2 - x^2}\ dx$, $\cos^2 x\ dx$, $\tan^4 x\ dx$, and $x^3 (1 + x^2)^{-\frac{3}{2}}\ dx$.

9. The abscissa of the centre of gravity of the area between the curve $ay^2 = x^3$ and the double ordinate where $x = a$ is $\frac{5}{7}\ a$.

10. The equilateral hyperbola $x^2 - y^2 = a^2$ between $x = a$ and $x = 2a$ revolves about the axis of x; show that the volume generated is equal to that of a sphere of radius a.

SECOND AND THIRD YEARS.

ENGLISH COMPOSITION.

Examiner,..... .....CHAS. E. MOYSE, B.A.

(A) Write the following extracts, correcting the spelling and inserting the marks of punctuation :—

1. He made an administration so chekered and speckled he put together a peice of joinnery so crossly indented and whimsiccally dovetailed a cabinet so variously inlayed such a peice of diversifyed mosiac such a teselated pavement without cement here a bit of black stone and there a bit of white patriots and courtiers king's friends and republicans whigs and tories trecherous friends and open ennemies that it was indeed a very curious shew but utterly unsafe to touch and unsure to stand on the collegues whom he had asorted at the same boards stared at each other and were obliged to ask sir your name sir you have the advantage of me.

2. The gentlemen his particular friends who with the names of various departments of ministry were admitted to seem as if they acted a part under him with a modesty that becomes all men and with a confidence in him which was justified even in its extravagence by his superior abilities had never in any instance presumed upon any opinion of their own

deprived of his guideing influence they were whirled about the sport of every gust and easily driven into any port and as those who joined with them in maning the vessel were the most directly opposite to his opinions measures and character and far the most artfull and most powerfull of the set they easily prevaled so as to seize upon the vacant unoccupied and derelict minds of his friends and instantly they turned the vessell wholly out of the course of his policy as if it were to insult as well as to betray him even long before the close of the first session of his administration when everything was publicly transacted and with great parrade in his name they made an act declaring it highly just and expediant to raise a revenue in America for even then sir even before this splendid orb was entirely set and while the western Horizon was in a blaze with his descending glory on the opposite quarter of the heavens arose another luminery and for his hour became lord of the ascendent.

B. Correct the following sentences and give brief reasons for the corrections: (*a*) It seems to me impossible to scientifically illustrate the matter. (*b*) I intend to proceed farther in the argument by supplementing what I have written. (*c*) Michael Angelo planned a totally different building to the existing one. (*d*) I hoped to procure the original placard which was posted on the walls but which I have been unable to do. (*e*) If you enter the room, you will see a harmonium standing near the window. (*f*) The gag is forced into the mouth of whomsoever lifts up his voice with a pure heart. (*g*) It is now about four hundred years since the art of multiplying books has been discovered. (*h*) What can be the cause of the parliament neglecting so important a business. (*i*) It was great in him punishing one to whom he had done some wrong. (*j*) The temper, as well as knowledge, of a modern historian require more sober knowledge. (*k*) I had rather be the prey of crows than flatterers, for these only devour the dead, those the living. (*l*) Neither the houses nor the garden were sold. (*m*) Neither the captain nor the sailors was saved. (*n*) One species of bread, of coarse quality, was only allowed to be baked. (*o*) The ends of a divine and human legislator are different.

C. Write an Essay on one of the following subjects :—

(*a*) A visit to a church or cathedral.

(*b*) "Sermons in stones."

(*c*) "Thrice is he armed that hath his quarrel just."

[The Essay must not be less than one and a half nor more than two pages in length. Write clearly, be careful in regard to punctuation, and jot down on the margin the main subject of each paragraph.]

ENGINEERING.

SECOND, THIRD AND FOURTH YEARS.

LOCOMOTIVE DESIGN AND CONSTRUCTION.

Examiners,..... { HENRY T. BOVEY, M.A., M.I.M.E.
H. WALLIS, M.I.C.E., MECHL. SUPT. G.T.R.

1. What are the distinctive differences in design between a *locomotive boiler*, an *internally fired return tube boiler*, and a *Lancashire boiler*? Compare their evaporative efficiencies, and give reasons why one is more efficient than another.

2. Give rough dimensions of a Lancashire boiler capable of supplying steam to a 100 I. H. P. engine, the working pressure per sq.-in. being 75-lbs. absolute, and anthracite coal being used.

3. Why is it usual to double-rivet the *longitudinal* and to single-rivet the *circumferential* joints of a boiler-barrel? State cases in which it is found advisable to depart from this rule.

4. Give an average tensile strength (*with and across the grain*) suitable for (*a*)—wrought-iron boilers, (*b*)—steel boilers. How is the arrangement of the plating affected by the difference of strength with and across the grain?

5. Explain the meaning of the terms *pitting*, *corrosion* (*internal and external*), *grooving or furrowing*, as applied to a steam boiler. In what parts are these effects to be looked for? To what are they chiefly due?

6. Give the average proportion of fire-grate to fire-box heating surface and also to total heating surface in a locomotive boiler. What is the average ratio of length to diameter in the case of the boiler tubes?

7. Give skeleton sketch showing how the weight on four coupled wheels (two on each side) is brought from the frame on to the axle bearing by means of a balance-beam.

8. How would you proportion the areas of the steam and exhaust ports, as compared with the sectional area of the cylinder, in an express locomotive?

9. What is meant by the *inside* and *outside laps* and the *lead* of a slide-valve? Sketch a slide-valve and buckle suitable for an express locomotive outside cylinder, and show a method of balancing the valve.

10. Of what use are side-rods in a Locomotive? To what stresses are they subjected? Sketch, giving dimensions, one end of a side-rod for a $3\frac{3}{4}$-ins. x $3\frac{1}{4}$-in. pin; the rod is to be solid ended and brass bushed.

11. In a *link-motion* show, by means of a sketch, the positions of the eccentrics on the axle relatively to the crank pin, (*a*)—when the valve spindle is connected directly or in line with the link pin, (*b*)—when a rocking arm intervenes.

N.B.—Allowance to be made for lap and lead in both cases.

12. In a link motion, how is the valve motion affected by linking up?

SECOND, THIRD AND FOURTH YEARS.

MATERIALS.

Examiners, ... { HENRY T. BOVEY, M.A., A.M.I.C.E.
JOHN KENNEDY, M.I.C.E., Chief Engineer Montreal Harbour Works.

I. TIMBER.

1. Name the specimens on the table and describe the characteristics of four of the principal timbers used in engineering structures.

2. What timbers are most suitable for (*a*)—bridges and trestles (*superstructure*), (*b*)—piles, (*c*)—submerged timber-work, (*d*)—crib-work above water, (*e*)—railway ties.

Briefly state your reasons for the selection in each case.

3. Write out a specification for the timber to be employed in crib-work.

4. Under what conditions is timber most liable to decay ?

5. Enumerate the principle processes in use for the preservation of timber, and describe one of these processes in detail.

II. LUBRICANTS.

6. What is a lubricant ? What is its purpose ? What properties must it possess to render it effective as a lubricating material ? How would you *assist* a lubricant to prevent the over heating of a journal ?

7. How would you determine the economic value of a lubricant ?

8. What are the best lubricants for (*a*)—journals under heavy pressures and low velocities, (*b*)—journals under heavy pressures and high velocities, (*c*)—journals in ordinary machinery, (*d*)—steam-cylinders, (*e*)—delicate mechanisms, (*f*)—low temperatures ? Give examples.

III. FUEL.

9. Enumerate the fuels used in metallurgy and engineering.

10. How would you ascertain (*a*)—the *heating power* of a fuel, (*b*)—the minimum quantity of air required for its complete combustion, (*c*)—the heat efficiency of a furnace ?

11. Name and characterize the fuels ordinarily used, (*a*)—in locomotives in Canada and the United States, (*b*)—in casting processes.

SECOND, THIRD AND FOURTH YEARS.

DRAINAGE.

Examiners, ... { HENRY T. BOVEY, M.A., A.M.I.C.E.
JOHN KENNEDY, M.I.C.E.

N.B.—The answers to the following Questions are to be illustrated wherever possible by carefully drawn sketches.

1. How do you determine the quantity of water to be dealt with in a system of sewerage?

If it is expedient to exclude excessive rainfalls, show how you would do so.

2. State some of the considerations which must influence an engineer in his selection of an outfall and in his decision as to the disposal of the sewage.

3. Sketch some of the generally approved sectional forms of sewer ranging in area from 30 to 150 sq. ft. Remark upon any special advantages which may belong to the several forms.

4. What is meant by a self-cleansing sewer? How is a sewer made to be self-cleansing?

5. Write out a specification for the construction of: (*a*).—a brick sewer of about 20-sq.-ft. sectional area (*b*).—an earthenware sewer of about 1-sq. ft. sectional area.

6. Explain how you would prepare foundations in soft ground for each of the sewers in the preceding Question.

7. Describe the construction and uses of manholes and lamp-holes.

8. Describe an approved form of *gully*.

9. What is the object of flushing? What advantages are gained by flushing? Give a detailed description of some method by which flushing is effected.

10. Give reasons for the ventilation of sewers. What considerations should govern the adoption of any proposed method?

ESSAY.

Write an essay on one of the following subjects :—

FOURTH YEAR.

1. Analysis of Mineral Phosphates.
2. Impact of Water.
3. Lubrication and Friction.

4. Thermodynamic Laws.

5. Ventilation of Mines.

6. Water analysis especially with reference to Montreal water.

THIRD YEAR.

7. Experimental results as to the effect of repeated stresses upon the strength of materials of engineering.

8. Lighting of mines.

9. Lubrication and Friction.

SECOND YEAR.

10. Fuel.

11. Gold Mines of Canada.

12. Lubrication and Friction.

13. Manufacture of Nitric-Acid.

EXAMINATION FOR B.A. Sc. (*Course of Mechanical Engineering*).

STEAM BOILERS, CUTTING TOOLS.

Examiners,..... { HENRY T. BOVEY, M.A., M.D., M.E.
H. WALLIS, M.I. M.E., MECHL. SUPT. G.T.R.

N.B. The answers are to be illustrated wherever possible by carefully drawn sketches.

Part I.—STEAM BOILERS, 9 A.M. TO 11 AM.

1. Sketch the principal joints in a boiler shell, and state the considerations which would govern you in spacing the rivets.

2. Of what use are Galloway tubes? Show by a sketch the arrangement usually adopted for Lancashire boilers.

3. What is a gusset-stay? a longitudinal stay? a diagonal stay? Show by sketches how they are employed and state their use.

4. Describe an approved method of securing the front tube-plate (or sheet) to the shell of a locomotive boiler, and explain how the wrought-iron tubes are secured to the plate.

What should be the thickness of a tube-plate for a boiler 4-ft. in diar.? Why?

5. What is the use of a steam-dome? Show by a sketch the manner of connecting the dome with the barrel.

6. What is meant by boiler incrustation? Is it more difficult to deal with substances precipitated by an elevation of temperature or with those left behind by the evaporation? Why?

State some of the methods suggested for the prevention and removal of incrustation. Describe the one you consider of most practical value.

Part II.—CUTTING TOOLS, 11 A.M. TO 1 P.M.

1. Describe some of the common forms of saw-teeth, and explain how they are set.

2. Give a detailed description of the action of a planing tool.

3. Describe a reversible tool-holder.

4. Discuss the action and relative value of conical and parallel mandril bearings.

5. Give a general statement of the influence of the cutting-pressure on the tool point in a lathe, of the cutting speed on the cutting pressure, and of the comparative resistance to cutting in forged steel, wrought-iron and cast-iron.

6. What are the considerations by which you would be guided in determining the proper top and bottom rake for a cutting tool ?

EXAMINATION FOR B.A. Sc., (*Course of Mechanical Engineering.*)

MACHINERY AND MILLWORK.

Examiners,..... { HENRY T. BOVEY, M.A., M.I.M.E.
HERBERT WALLIS, M.I.M.E.

1. Construct a quick-return motion for a given travel of 12-ins. so that the maximum return may be twice the maximum cutting velocity. Also if the number of double strokes per minute is 20, find the maximum cutting, speed, and compare the times of cutting and return.

2. A uniform shaft transmits work, show that its efficiency is

$$1 - 2 \cdot w \cdot \frac{f}{s} l.$$

w being the specific weight of the material of the shaft, f the coefficient of friction, s the max. safe stress and l the length.

A wrought-iron shaft 220-ft between bearings and 4-ins in diameter can safely transmit 120 H. P. at the rate of 95 revolutions per minute; what is the efficiency of the shaft?

3. An endless open belt travels round two pulleys, find the ratio of the tight to the slack tension and also the friction between the belt and pulleys. State the relation between the size of a belt, its speed and the power it transmits. What circumstances limit the useful speed at which a belt may be driven. If the pulleys are 50-ft c. to c. and if the tight is 3-times the slack tension, find the length of the belt, the coefficient of friction being $\frac{1}{2}$, and the diameter of one of the pulleys 12-ins.

4. Describe the principle of the dynamometer, and classify the various kinds of dynamometer.

5. Show how to determine the efficiency of the teeth of wheels, and apply to the following case :—

The driver of a pair of wheels has 120-teeth, and each wheel has an addendum equal to ·28 times the pitch ; the arcs of approach and recess are each equal to the pitch ; the teeth flanks are radical (coefficient of friction = ·106.)

6. Draw the linear diagram of crank effort in the case of single crank, the connecting rod being = 4 cranks—assume the resistance uniform and a constant pressure of 9,000-lbs. on the piston, the stroke being 4-ft and the number of revolutions per minute 55. Also find the fluctuation of energy in ft-lbs for one revolution.

7. The piston-rod, connecting-rod, crank and crank-pin in the preceding questions are made of steel ; determine their proper dimensions. Also find the area of the slides, the safe stress per sq-in being 125-lbs.

8. Assuming that the crank-pin centres of a pair of cranks set at right angles are moving uniformly and neglecting the obliquity of the connecting-rod show how to find the *alternating force* and *alternating couple*, and explain how you would balance them.

An inside cylinder locomotive is running at 25 miles an hour—the driving wheels are 60-ins in diameter, the distance between the centre lines of the cylinders 30-ins, the stroke 24-ins, the weight of the reciprocating parts 500-lbs, and the horizontal distance between the balance weights 59-ins., the diameter of the weight circle is 42-ins.

Find the alternating force, the alternating couple and the magnitude and position of suitable balance weights.

EXAMINATION FOR B.A. Sc.

DESIGNS FOR SESSION 1885–86.

(A specification and estimate required with each design.)

Examiners, ... { HENRY T. BOVEY, MA., A.M.I.C.E.
JOHN KENNEDY, M.I.C.E.
P. A. PETERSON, M.I.C.E.
H. WALLIS, M.I.C.E., M.I.M.E.

1. (*a*) Mineral car.
   (*b*) Head-work for a mine shaft.
   (*c*) Puddling furnace.
2. (*a*) A deck road-bridge of 60-ft. span.
   (*b*) A graving dock with an 80-ft. entrance, and 500-ft. long.

3. (*a*) An iron roof of 96-ft. span.
(*b*) A double-intersection timber and iron bridge of 100-ft. span.

4. (*a*) A roof of 50-ft. span.
(*b*) A grain elevator.

5. (*a*) A jib-crane with a 5-ft. throw to raise 10-tons a height of 10-ft.
(*b*) An arched wooden roof of 97-ft. span with a 16-ft. rise.
(*c*) A cantilever bridge of 350-ft. centre span.

6. A boiler for an express locomotive engine with 18-ins. × 24-ins. cylinders, and 5-ft. 8-ins. drivers.

THIRD YEAR AND B.A. Sc.

THEORY OF STRUCTURES (*Paper I*).

Examiner, ...HENRY T. BOVEY, M.A., A.M.I.C.E.

1. Explain what is meant by the *flow of solids*, and give examples of mechanical operations in which it occurs.

2. How is the strength of a material influenced by the fluctuation of stress?

A shaft is worked by a pair of engines with cranks at 120°, assuming that the pressure on the crank-pin is horizontal and constant in amount, compare the coefficients of actual and ultimate strength to be used in calculating the diameter of the shaft.

3. Define *centrifugal force*.

A wrought-iron fly-wheel 10 ft in diameter makes 63 revols. per minute. Find the intensity of stress on a transverse section of the rim, disregarding the influence of the arms. If the wheel which weighs W lbs., gives out work equivalent to that done in raising W through a height of $5\frac{1}{4}$-ft., what velocity will it loose?. If the axle of the wheel is 10-ins in diameter and if .08 is the coefficient of friction, show that it will take $\frac{W}{2500}$ horse-power to turn the wheel.

4. Prove the relations,

$$M = \frac{E}{R} \cdot \quad I = \frac{f}{c} \cdot I,$$

and state all the assumptions upon which they depend.

A block of ice 3-ins wide 4-ins deep has its ends resting upon supports 30-ins apart, and carries a uniformly distributed load of 4800 lbs. An increase of pressure to the extent of 1125 lbs. per sq-in lowers the freezing point 1° F. Assuming that the ordinary theory of flexure holds good, find the temperature of the ice.

5. A beam of double-tee section is loaded within the elastic limits and the tensile and compressive unit stresses are given; find a relation between the web and flange areas.

The central section of a cast-iron beam is $10\frac{1}{2}$-ins. deep, the area of its web is 5 times the area of the top flange, and the moment of resistance of the section is 360,000 ft-lbs.; determine the web and flange areas, the working tensile and compressive stresses per sq-in being 3,000 lbs. and 7,500 lbs. respectively (*neglect the weight of the girder*).

6. What is meant by the *stiffness* of a girder? If *stiffness* and *strength* are of equal importance show that the best ratio of depth to span is $\frac{p \cdot f}{q \cdot \mathrm{E} \cdot s}$ p and q being coefficients depending respectively on the manner of loading and on the form of the cross-section, f the safe unit-stress, E the coefficient of elasticity and s the ratio of the max. deflection to span.

In the preceding question the moment of resistance is due to a uniformly distributed load; find the span and the load so that the beam in addition to the specified strength may have a stiffness of $\frac{1}{1000}$th.

7. Design a cast-iron cantilever 16-ft. long and of approximately uniform strength to carry a load of 4000 lbs. at the free end, together with a uniformly distributed load of 4800 lbs., the coefficient of working strength being 2,000 lbs per sq-in, assuming, (*a*).—the breadth to be uniform and equal to 8-ins., and the section a rectangle, (*b*).—the section to be a square.

8. A homogeneous pillar of uniform sectional area is absolutely fixed at the lower end, while its upper end remains free; show how to determine the crushing load of such a pillar, assuming that the form of the pillar when bent is a circular arc.

Find the crushing load, the pillar being of wrought-iron, 4-ins in diar. and 12-ft high. Also calculate the lateral deviation so that the max-stress under a load of 16,000-lbs may be 10,000 lbs per sq-in.

9. Deduce an expression for the horse-power transmitted by a shaft of D-ins. diar. making N revolutions per minute.

Determine the diar. of a wrought-iron shaft which will transmit 100-H. P. at 100 revolutions per minute, 7200 lbs per sq-in being the max-allowable stress.

10. Show that the total intensity of stress at any point of a plane in a strained solid is the resultant of two constant intensities of which one is perpendicular in direction to the given plane. Also show that the angle between the directions of the two constant intensities is twice the angle between the plane and the axis of greatest principal stress.

The two principal stresses at a point in a strained solid are a tension of 200 lbs per sq-in and a compression of 100 lbs per sq-in. Find the magnitude and obliquity of the resultant stress at the given point on a plane inclined at 30° to the axis of greatest principal stress.

11. The faces of a reservoir wall 4-ft wide at the top and 40-ft high have the same batter, and water rises on one side to within six-ft of the top; find the batter, assuming, (1).—that the pressure on the base which is horizontal is to be no where negative, (2).—that the pressure is uniformly varying and at no point exceeds 10,000 lbs per sq-ft in intensity (masonry =125 lbs per cub-ft.)

12. Remark on the use of offsets, large front batters, and counterforts in retaining walls.

THIRD YEAR AND B.A. Sc.

THEORY OF STRUCTURES (*Paper II*).

Examiners,..... { HENRY T. BOVEY, M.A., A.M.I.C.E.
P. A. PETERSON, M.I.C.E.

1. Carefully explain the meaning of the terms *bending-moment* and *shearing-force*, as applied to a loaded beam.

A girder supported at the ends is loaded with a number of weights at given intervals, show that the difference between the bending moments at the two ends of an interval is equal to the shearing force multiplied by the length of an interval. Hence also show that if the bending moments are the same at any pair of consecutive weights, the bending-moment is the same at all points between them.

2. A horizontal girder supported at the ends is loaded with a number of weights at given intervals; prove that the vertical ordinate at any point intercepted by the funicular polygon and a certain closing line represents the bending moment at the point.

Four wheels loaded with 4, 4, 8, and 8 tons, at intervals of $6\frac{1}{4}$, $8\frac{1}{2}$, and $8\frac{3}{4}$-ft., are placed upon a girder of 24-ft. span, the first wheel being 3-ins. from the support; find by scale measurement the bending-moment at the centre of the girder, using any suitable scales. Also determine the greatest bending-moment which can be produced at the same section when the wheels travel over the girder at the stated distances apart.

Place the wheels so as to give an absolute maxiumm bending moment and find its value.

3. Draw a skeleton diagram of a derrick suitable for a 100′ × 30′ scow, and determine the stresses in the various members and at the bottom of the post when a weight of 6-tons is being lifted.

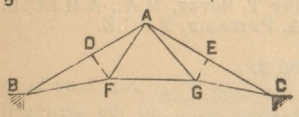
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In the accompanying diagram AB = BC = ... = GH = $8\frac{1}{4}$-ft.; HK = $6\frac{1}{2}$-ft.; the height of the truss is 8-ft. at B and 16-ft. at K; at A there is a load of 1-ton, at each of the points B, C, D, E, F and G, a load of 2-tons,

at H a load of 1½-tons; determine the stresses in all the members. Also draw the funicular polygon.

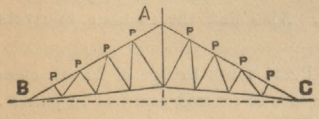
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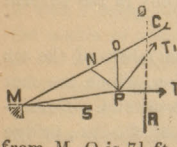
In the accompanying diagram BC=50-ft., FG is 8-ft. vertically below A, and the angle ABC = 30°; the dead weight on each rafter is 120-lbs. per lineal ft.; there is also on AB a normal pressure of 300-lbs. per lineal ft.; rollers are placed under the end of the rafter at C; find the stresses in all the members. Find the alterations in the stresses—(*a*) when an additional load of 2000-lbs. is concentrated at D, (*b*) when the strut D F is removed.

6. The platform of a bridge of 36-ft. span and 12-ft. wide is supported on each side by an inverted Queen-truss; the Queen-posts are each 9-ft. long and divide the span into 3 equal parts. Find the stresses in the several members for a uniformly distributed load of 50-lbs. per sq.-ft. of platform. Examine the effect of an additional load of 50-lbs. per sq.-ft. of platform on one-half of the bridge, and explain how you would modify the truss to bear this unevenly distributed load.

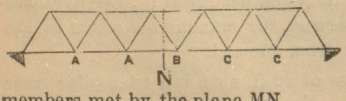
7. Construct the reciprocal diagram of the accompanying truss, in which AB = AC = 30-ft., the angle ABC=30°, and the load at each of the points P is 2-tons; the struts are normal to the rafters.



8. The figure reprssents a portion of a roof truss cut off by the plane Q R and supported upon the abutment at M. The vertical reaction at M = 7-tons, the horizontal reaction at M = 2½-tons, a weight of 4 tons is concentrated at each of the points N and O; the angle CMS = $\cos^{-1}\frac{4}{5}$; the perpendicular distance of P from M O is 7½-ft.; MP = 23-ft.; PO is vertical and PN = PO; PM and T, make equal angles with the rafter; find the compression C in the rafter at O, and the two tie-rod tensions T_1 and T_2.



9. The Warren girder shown by the diagram consists of six equilateral triangles, is of 60-ft. span, is loaded with 2-tons at each of the points a, 15-tons at B, 7½-tons at each of the points C; find the stresses in the members met by the plane MN.

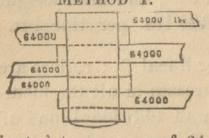


EXAMINATION FOR B.A.Sc.

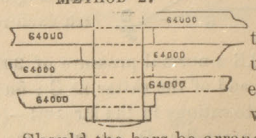
THEORY OF STRUCTURES (*Paper III*).

Examiners,..... { HENRY T. BOVEY, M.A., A.M.I.C.E.
P. A. PETERSON, M.I.C.E.

METHOD 1.



METHOD 2.



1. Six bars have to be arranged upon a steel pin; each bar is $1\frac{3}{8}$-in. wide and is subjected to a stress of 64,000-lbs. Should the bars be arranged according to method 1 or method 2? Why? Determine the diameter of the pin.

2. Show that the number of rivets required between two consecutive panel points of bridge truss is $\frac{S}{f\ A\ d}$, S being the shearing force between the points, f the co-efficient of shearing strength, A the sectional area of a rivet, d the depth of truss.

3. A lattice girder of 90-ft. span and $4\frac{1}{2}$-ft. deep, with *three* systems of right-angled triangles, carries a uniformly distributed load of 5,000-lbs. per lineal ft.; determine the stresses in the several members met by verticals in the 3rd and 4th bays from the end. Also find the number of rivets required for the flanges in these bays.

4. A double-intersection single-track Pratt truss bridge of 204-ft. span is 29-ft. deep c to c of pins, 20-ft. wide c to c of trusses, and has 12-panels. Assuming a panel wind pressure of 5,000-lbs. acting 8-ft. above base of rails (5 ft. gauge), determine the stresses induced thereby in the several members of the leeward truss.

5. Determine the maximum stresses in the several members of the 4th panel from the end of the truss in the preceding question, which are met by a vertical. Also design the 3rd post from the same end. *Data.*— Engine panel load = 85,000-lbs., train panel load = 40,800-lbs., bridge panel load = 25,500-lbs.

If the top flange consists of plates riveted together, determine the number of rivets required for the portion of the flange in the 4th panel.

6. The upper chord of a bowstring girder with isosceles bracing (8 isosceles triangles) is a circular arc of 80-ft.-span and 10-ft. rise at the centre; the dead-load on the girder is $\frac{1}{2}$-ton per lineal ft., the live-load 1-ton. Determine, graphically or otherwise, the maximum stresses in the three members met by a vertical 28-ft. from one end.

7. The main framing for a roof-truss of 60-ft. span is a triangular truss A B C, A B ($\equiv$ 15-ft.) being vertical and B C (= 60-ft.) horizontal. Introduce the other braces you deem necessary, and show how to determine the proper dimensions of all the members.

8. Explain how you would determine the economic depth of a bridge truss of given span carrying a uniformly distributed load.

Ex.—A double intersection Pratt-truss of ten panels.

EXAMINATION FOR B.A. Sc.

THEORY OF STRUCTURES (*Paper IV*).

Examiner,.....HENRY T. BOVEY, M.A., A.M.I.C.E.

1. A masonry arch is symmetrical with respect to a vertical plane through the key-line; show how to determine the re-actions at the key-joint and at the springing, stating all the assumptions you make.

Ex.—An arch with horizontal extrados and parabolic intrados of 128-ft. span and 32-ft. rise; height of masonry above crown 6-ft.; weight of masonry per cubic ft., 125-lbs.; width of springing = 12-ft.

2. State the conditions of equilibrium of an arch voussoir.

3. Distinguish between the "curve of pressures" and the "curve of the centres of pressure." Show that they may be made to coincide and that the equation to either curve is then

$$P.\ Y. = w.\ X \int_0^x z.\ dx - w \int_0^x z.\ x.\ dx,$$

X and Y being the co-ordinates of any point on the curve with respect to the centre of pressure at the key-joint as origin, P the resultant pressure at the key-joint, z the vertical depth of the arch at a horizontal distance x from the origin, and w the weight of a cubic ft. of masonry. Find the equation to the curve of pressures in the parabolic arch of Question 1. By how much could its span be safely increased? What would be the corresponding rise?

4. Explain the relation between the *common catenary* and *transformed catenary*. What is the object of the latter?

Given—span = 30-ft., rise = $7\frac{1}{2}$-ft., height of masonry over crown = $4\frac{1}{2}$-ft.; weight of masonry = 125-lbs. per cub.-ft., determine the transformed catenary, the amount and direction of thrust at the springing, the curvature at the crown and springing.

5. Deduce the *equation of condition* in the case of an arched rib with hinged ends, and show how to determine the horizontal thrust on the rib. In what manner will the result be modified if changes of temperature are taken into account.

A parabolic arched rib, hinged at the ends, of 64-ft.-span and 16-ft. rise is loaded with 1-ton at each of the points of division of eight equal horizontal divisions; find the horizontal thrust on the rib, allowing for a change of 60° F in the temperature. Also find the maximum flange stresses the rib being of a double-tee section and 12-ins. deep throughout.

(Coeff. of expansion for 1° F = .0000067).

6. The platform of a suspension bridge of 300-ft. span is supported by 148 vertical suspenders (74 on each side) from two steel cables which are connected to saddles resting on rollers on the tops of two piers of equal height. The pier tension is equal to 1.035 times the tension at the lowest point; find the dip. The weight of the chains, platform, suspenders, etc., may be considered equivalent to uniformly distributed load of 1,200,000-lbs., and the weight of the cables per lineal ft. is *one-fourth* of the load per lineal ft. of platform, find the sectional area of a cable. Also find the pull on a suspender, and the max. stress per sq.-in. on the cables. The back-stays are anchored at points in the ground 75-ft. from the piers which rise 60-ft. above the ground; find the load on the piers and the pull on the anchorage.

7. Show how to determine the weight of a cable of uniform sectional area.

Find the weight of the cables in the preceding Question.

8. What is the object of a stiffening truss. Design one for the bridge in Question 6, taking a live load of 2,000-lbs. per lineal ft.

THIRD AND FOURTH YEARS.—(*Advanced Course.*)

THEORY OF STRUCTURES (*Paper I*).

Examiner,.....HENRY T. BOVEY, M.A., A M.I. C.E

1. An elastic lamina in the form of an isosceles triangle A B C, has its base A B (= 2*a*) fixed and hangs vertically. A weight W is suspended from C; find the consequent elongation. If an additional weight is placed upon W, and then suddenly removed, show that an isochronous oscillation is set up, and find the time of a complete oscillation. (*Neglect the weight of the lamina*). Take thickness of lamina *unity*, coeff. of elasticity = E, and vertical distance of C from A B = L.

2. The web area of an equal flanged girder under a given load varies both as the square of the depth and as the shearing force. Find the most economical ratio of web to flange area and of depth to span; also find the limiting span.

3. A rectangular balk of white pine weighing 32-lbs. per cub. ft. and 24-ft. long is fixed at one end and is merely supported at the other. The beam

carries 160 sq.-ft. of flooring loaded with 50-lbs. per sq. ft.; find its dimensions so that the max. deflection may not exceed $\frac{1}{2}$ in., E being 2,000,000 lbs. Find the work done in bending the beam.

4. A continuous girder of two equal side spans, and a centre-span of length L, carries a uniformly distributed load. Find the length of each side span so that the neutral axis may be truly horizontal over the intermediate supports. What should the length be when the centre span is hinged, (1).—at the centre, (2).—at the points of trisection?

Draw shearing force and bending-moment curves in each case.

5. The water pressure on a dam is supported by a row of uprights 20-ft. in length, spaced 12-ft. apart, fixed at the base, and having their upper ends kept in the vertical by struts sloping at 45°. The water rises 18-ft. on the dam, find the thrust on the struts and the max deviation of the uprights from the vertical.

Draw shearing force and bending moment curves.

6. The dam in the preceding question is afterwards supported by a second row of struts parallel to the first, the three points of support being in the same vertical. If the horizontal reactions at the points of support are all equal, show that the intermediate support divides the upright into segments which are very nearly in the ratio of 5 to 1.

7. Briefly state Weyrauch's theory of the resistance of struts to buckling.

The load upon a solid square wrought-iron strut. 15-ft. long varies from a max. compression of 50 tons to a min. compression of 20 tons; find its sectional area, allowance being made for buckling. Take $t = 45{,}734$ lbs. per sq. in., $u = 24{,}941$, $\sigma = 24{,}000$, and 3 as a factor of safety.

8. A strut of uniform section has one end fixed and the other free. Show that the minimum load at the free end which will cause the strut to bend laterally is

$$\frac{1}{4} E.I. \frac{\pi^2}{l^2}$$

the line of action of the load being parallel to the axis of the strut.

9. The faces A B, A C of a wall are parabolas of equal parameters, having their vertices at B and C; water rises on one side to the top of the wall. Determine the thickness of the horizontal base B C, (1),—for a wall 30-ft. high, (2),—for a wall 60-ft. high, so that the pressure on the base may at no point exceed 10,000 lbs. per sq. ft. (wt. of masonry per cub. ft. = 125 lbs.) Also compare the volume of such a wall with the volume of an equally strong wall of the same height, having a section in the form of an isosceles triangle with vertex at A.

State all the assumptions you make.

B.A. Sc.—(*Advanced Course.*)

THEORY OF STRUCTURES (*Paper II*).

Examiner,.....HENRY T. BOVEY, M.A., A.M.I.C.E.

1. A continuous girder consists of two spans, $A\ B$, of length l_1, and $B\ C$ of length l_2, absolutely fixed at A and C, and resting upon an intermediate support at B. The loads upon $A\ B$ are a number of weights, $P_1, P_2, P_3, \ldots$ distant $p_1, p_2, p_3, \ldots$ respectively from A, and upon $B\ C$ a number of weights, $Q_1, Q_2, Q_3, \ldots$ distant $q_1, q_2, q_3 \ldots$ respectively from C; M_1, M_2, M_3 are the bending moments at A, B, C, respectively. Show that:—

$$M_1 l_1 + M_2 (l_1 + l_2) + M_3 . l_2 =$$

$$\Sigma P . \frac{p}{l_1} . (l_1 - p)(l_1 - 2p) + \Sigma Q . \frac{q}{l_2} (l_2 - q)(l_2 - 2q).$$

Find the reactions at the supports.

2. A Locomotive and Tender pass over the girder in the preceding question. The loads on the wheels of the Truck, Locomotive, and Tender, counting in order from the front are 7, 7, 10, 10, 10, 10, 8, 8, 8, 8 tons, the intervals being 5, 5, 5, 5, 5, 9, 5, 4, 5, ft; A B= B C=50 ft. Place the locomotive, (1).—on the span A B so as to give a max. B.M at B, (2).—so as to give an absolute max. B M at B.

In each case find the reactions at the supports.

3. A parabolic rib of uniform stiffness is hinged at the ends, and in addition to a uniformly distributed load carries a weight P at a given distance from one of the supports; show how to find the shearing force, bending moment, and maximum intensity of stress at any point of the rib, and also the maximum of deflection of the rib.

4. Explain Maxwell's method of determining the resultant thrusts at the supports of a framed arch.

5. A large floating landing-stage in a swift-running river is held in position by a number of $4\frac{1}{2}$-in. steel wire cables securely anchored to the shore, a shoreward movement being prevented by rigid iron booms stretching from the shore to the stage. One of these cables is subjected to a *horizontal* pull of 1,360 lbs.; the difference of level between its shore and stage attachments is 50 ft.; the horizontal distance between these points is 150 ft.; find the length of the cable, and the cable tension at the shore and stage ends. (*Weight of steel cable* = 490 *lbs. per cubic ft.; form of cable a common catenary.*)

B.A. Sc. EXAMINATION.

HYDRAULICS (*Paper I.*)

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. Define the co-efficients of velocity and resistance, and deduce the relation which connects them.

Water issues horizontally under a head of 9-ft. from a thin-lipped orifice 2 sq.-ins. in area and strikes a point whose horizontal and vertical distances from the orifice are 7½-ft. and 4-ft., respectively; the discharge is 78.125 gallons per minute. Find the co-efficients of discharge, velocity, resistance and contraction.

2. A hollow cone 2-ft. high and having a circular base 4-ft. in diar. is inverted and filled with water. Find the time in which the cone will be emptied through an orifice at the vertex ·01 sq.-ft.-in. area, using ·625 as the coeff. of discharge.

3. Deduce an expression for the discharge through a rectangular notch taking the velocity of approach into account, and explain how you would make allowance for such contractions. Why is a triangular notch more suitable than a rectangular notch for accurate gaugings?

A stream 100-ft. wide and 4-ft. deep flows at the rate of 90-ft. per minute. Find the height of a dam which will double the depth of the stream.

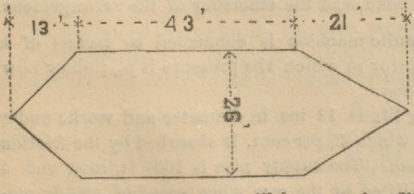
4. Water flows through a perfectly smooth pipe of gradually changing diameter; show that

$$z + \frac{p}{w} + \frac{v^2}{2g} = \text{Constant},$$

for all points of the pipe.

50 gallons of water per second are discharged through a smooth pipe with its axis inclined to the horizon at 30°. In a length of 20-ft. between two points A and B the diameter gradually changes from 3-ins. at A to 6-ins. at B; the pressure at A is 125-lbs. per sq.-in. Find the pressure at B.

5. State the laws of fluid friction as determined by experiment. A timber caisson of horizontal section and dimensions, as shown in the diagram, is to be sunk in 30-ft. of water in a current of 8-miles per hour. Determine the force which the anchoring cables will have to bear. What is the least depth to which concrete will have to be filled in to prevent the caisson floating, when the water inside is pumped out?



6. Two pipes of the same length have sectional areas in the ratio of 2 to 1; compare the losses of head by skin friction—(*a*) when the velocity of flow is the same in each, (*b*) when each gives the same discharge.

7. Water stands 400-ft. above datum in one reservoir and 200-ft. above datum in a second reservoir, the two being connected by a uniform pipe 10,000-ft. long and 18-ins. in diar. Draw the hydraulic gradient, and find to what height the water will rise in a supply-pipe taken 5,000-ft. from one end. If this point is connected by an 18-in. pipe 5,000-ft. long with a third reservoir, in which the water stands 300-ft. above datum, discuss the distribution ($f = .0075$.)

8. 100 gallons per minute flow through a horizontal piping of three sections AB, BC, C D, each 40-ft. in length. The sectional area of AB is 3-sq.-ins., of BC 6 sq.-ins., and of C D 3 sq.-ins.; find the *total* loss of head *f* being ·0075. Also find the diameter of an *equivalent uniform* pipe.

9. Deduce an expression for the steady flow of water in a channel of uniform section, clearly stating all the assumptions you make.

The inclination of the bed of a river of uniform width is the same throughout certain lengths but differs from length to length; show by a sketch the points at which the water is deepest.

10. On one occasion the effect of a wind blowing along a canal was found to be equivalent to increasing the "wetted perimeter" by 20 per cent.; what was the corresponding diminution in the velocity of flow and in the discharge?

HYDRAULICS (*Paper II*).

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. A jet of 48 sq.-ins. sectional area, moving with a velocity of 15-ft. per sec., strikes a series of flat vanes introduced at short intervals at the same point. Each vane moves in the direction of its normal with a velocity of 10 ft. per sec., and at the moment of impact the direction of a jet makes an angle of 10° with the normal; find the pressure on a vane, the work done per second, and the efficiency of the arrangement.

2. The cylinder of an hydraulic machine is connected by means of a supply pipe with an accumulator in which the pressure is p_o; show how to find the *speed of steady motion*.

The ram for a direct-acting lift is 12 ins. in diameter and works under a constant head of 1728 ft., of which 25 per cent. is absorbed by the friction of the ram and other mechanism. The supply pipe is 1000 ft. long and 4 ins. in diar. Find the weight lifted by the ram when speed of steady motion is 1 ft. per sec. Also show that the max. speed of steady motion can never exceed 2.71 ft. per sec. ($f = .0075$, $g = 32$).

3. Explain the working of a reaction wheel, and show that its efficiency is $\frac{2\ V\ (u - V)}{u^2\ (1 + F) - V^2}$, u being the water's velocity of efflux, V the speed of the orifices in their circular path, and F the coefficient of hydraulic resistances reduced to the orifices.

Experience gives the speed of maximum efficiency as being that due to the head, find the corresponding value of F, and also the maximum efficiency.

4. Show how to determine the mechanical effect of an undershot water wheel with flat vanes, and prove that its maximum efficiency is .5.

Find the H.P. of an undershot wheel 15-ft. in diameter with flat vanes working *to the best advantage*, the delivery of water being 24-cub. ft. per min. and the number of revolutions 7 per minute.

5. Describe a Poncelet undershot water wheel, and point out its advantages over one with radial floats.

6. An overshot wheel 32-ft. in diar. has a rim velocity of 8-ft per sec; 5-cub. ft. of water per sec. enter the buckets with twice this velocity at a point $12\frac{1}{2}^\circ$ from the summit of the wheel; the deviation of the impinging water from the direction of motion of the wheel is 10°, the deviations from the centre of the points where spilling begins and ends are respectively $58\frac{1}{2}^\circ$ and $70\frac{1}{2}^\circ$; find the total mechanical effect due to the impact and weight of the water.

Also find the deviation of the water surface from the horizontal at the point where spilling commences.

7. Describe an inward-flow turbine

Construct an inward flow turbine from the following data:—efficiency $=\frac{3}{4}$, head = 32-ft; quantity of water passed per second = 10-cub. ft. $v'^r = v''^r = \frac{1}{8}$ (velocity due to head), $= v''^w = 0$, $a = 68^\circ$

B. A. Sc. ADVANCED COURSE.

HYDRAULICS.

Examiner,.....HENRY T. BOVEY, M.A., A.M.I.C.E.

1. The motion of the water in an open stream is *steady* and the variation of cross-section and velocity is gradual; show that the slope of the water surface relatively to the bed of the stream is given by the equation,

$$\frac{d\,h}{d\,s} = \frac{i - \frac{f}{m}\cdot\frac{u^2}{2g}}{1 - a\,\frac{u^2}{g}\cdot\frac{x}{A}}$$

If the cross section of the stream is a rectangle of great width as compared with depth, and if H is the value of h for a condition of *uniform* motion, discuss the physical meaning of the above equation when,

$$(a.)\text{-}\ h > a.\ \frac{u^2}{g} \text{ and also } > H,\ (b.)\text{-}\ h < a\ \frac{u^2}{g} \text{ and also } > H,$$

$$(c.)\text{-}\ h = H, \text{ and also } > a\ \frac{u^2}{g}.$$

2. A pipe gives a total *end service* Qe ; if an *end service* $Q^1{}_e$ is sufficient, how much is available for a uniform way service ?

3. L is the length equivalent to the inertia of a water pressure engine and F is the co-efficient of hydraulic resistance, both reduced to the ram. The ram moves from rest against a constant useful resistance ; show that when the velocity of the ram is v its acceleration is $F\ \frac{(v_0{}^2 - v^2)}{2\,L}$, V_0 being the velocity of *steady motion* ; also find v when the ram has moved through a distance x, and the time occupied.

4. A spiral casing is formed round a centrifugal pump disc in a normal condition of working, show that the gain of pressure in the spiral chamber will be a maximum when the velocity of the water circulating round the disc. is *one-half* the whirling velocity at the outer edge of the disc.

5. Discuss the use of Involute Vanes for centrifugal pumps.

6. The surplus water in a pond having vertical sides and a superficial area of 12,000 sq. ft. is carried off by a channel 12 ft. wide at the bottom, and having a slope of 1 in 500. The sides of the channel are inclined at 30° to the vertical. On one occasion, after a heavy rain, the water in the channel was 3-ft. deep, how long did the water continue to flow through the channel ? (*assume all other inflows and outflows closed.*)

EXAMINATION FOR B.A.Sc.

HEAT AND HEAT ENGINES. (*Paper I.*)

Examiner,.....HENRY T. BOVEY, M.A., A.M.I.C.E.

1. Enunciate the laws which determine a *perfect* gas.

Does saturated steam behave more like a perfect gas at a high or low temperature ?

A boiler contains 400-cubic ft. of a mixture of air and vapour in contact with water, the temperature being 32° F and the pressure 14.7 lbs. per sq. in. ; find the pressure of the mixture when its temperature is increased to 212° F, and its volume to 420 cubic ft. (*initial and final prs. of the vapour are respectively* .089 *and* 14.7 *lbs. per sq. in.*)

2. Prove that for a perfect gas:

$$C_p - C_v = \frac{p.v}{T},$$

C_p and C_v being the mechanical equivalents of the specific heats of the gas at constant pressure and volume, and p, v, T its pressure, volume and absolute temperature.

3. 1-lb. of air at a pressure of 14.7 lbs. per sq. in. and a temperature of 62° F, is compressed *adiabatically* to one-half its volume. It is still further compressed at constant pressure until the volume is $\frac{1}{4}$ cub. ft., and is then cooled at constant volume to the temperature of 62° F; the air finally expands *isothermally* to the initial pressure of 14.7 lbs.; find the efficiency of the air.

4. Describe the cycle of operations in Carnot's reversible engine, and state the physical result of the cycle. What is the efficiency of a reversible engine working between given temperatures? What is the sole condition of the equivalence of two heat engines?

An engine with a 16-in. cylinder, a 36-inch stroke, and the cut-off at *one-fifth* of the stroke takes steam at 36½-lbs. per sq. in, and discharges into a condenser in which the pressure is 3 lbs. per sq. in.; compare the efficiency of the engine with that of a reversible engine working between the same limits of temperature. (log. $_e5 = 1.6094$.)

5. L is the latent heat of evaporation of a liquid at the absolute temperature T and a pressure of n atmospheres, the liquid and vapour are contained in a non-conducting cylinder and are allowed to expand by means of a piston; if u is the difference between their specific heats, prove that

$$L = \frac{T.\,u}{J} \cdot \frac{d\,n}{d\,T} \quad .2116.4.$$

6. Explain what is meant by the terms *clearance*, *cushioning* and *wire-drawing*.

An engine with the same stroke, rate of expansion, initial and back-pressures, as the engine in Question 4, but with a clearance equal to 1-20th of the volume swept through by the piston, is to do the same work; find the diar. of the cylinder.

7. When an engine is working at its normal rate explain in what manner the heat is expended per stroke.

Name the different states in which water may exist in a cylinder, and describe their effect upon the efficiency.

8. Describe the action of Ericsson's air-engine.

The air from one of these engines is drawn directly from and discharged directly into the atmosphere; the air receives heat from the furnace at 400° F and is compressed at 120° F; the regenerator wastes *one-tenth* of the head stored at constant pressure; the efficiency is *one-fourth*; find the rate of the expansion at constant temperature.

9. A volume, v_1 of steam at the pressure p_1, is admitted into a cylinder and expanded to the volume v_2, of the cylinder and the pressure p_2. If the steam expands according to the law $p.v^n = \text{const.}$, show that the useful work of expansion is

$$p_1 v_1 + \frac{p_1.v_1 - p_2.v_2}{n-1} - p_3.v_2,$$

p_3 being a constant back pressure.

In a Woolf engine the common stroke is 6-ft., the sectional areas of the cylinders are as 1 to 3, the initial pressure in the H. P. cylinder is 63 lbs. per sq. in., and the rate of expansion in the same cylinder is 3, the back-pressure in the L. P. cylinder is 3-lbs. per sq. in., the no. of revolutions per minute is 40; find the horse-power of the engine, and the average *effective* pressure in each cylinder, assuming that the steam expands according to the law $p.v^n = \text{const.}$ where $n = \frac{10}{9}$.

10. Show how to determine, (*a*) the heat of combustion of 1-lb. of coal, (*b*) the amount of air required for the complete combustion of 1-lb. of coal.

EXAMINATION FOR B.A.Sc.

HEAT AND HEAT ENGINES (*Paper II*).

Examiner, ... HENRY T. BOVEY, M.A., A.M.I.C.E.

1. If w is the weight of the reciprocating parts in a direct acting horizontal steam-engine, and if the obliquity of the connecting rod is neglected, show that the pressure on the crank-pin due to *inertia* when the piston is distant x from the centre of the stroke is $C.\frac{x}{r}$, C being the centrifugal force of w assumed concentrated at centre of crank-pin and moving with the same uniform velocity, and r the length of the crank.

Find the proper weight of the reciprocating parts in Question 4 of Paper I, the condition being imposed that the initial and final pressures on the crank-pin are equal.

2. State the principal causes of vibration in machines and the means adopted to prevent their destructive effects.

Illustrate by means of example in previous Question.

3. Define the lap, lead, angle of advance of a slide-valve.

Explain the effect produced by—(*a*) increasing the lap *first* on the steam side, and *second* on the exhaust side; (*b*) increasing the angle of advance; (*c*) increasing the lead.

4. Describe—(*a*) the common D valve, (*b*) an equilibrium valve. What is the use of an expansion valve?

In the engine of Question 4, Paper 1, the connecting-rod = 4 cranks, the half-travel = $4\frac{1}{2}$ ins, the width of port = $2\frac{1}{4}$ ins, the angle of lead for the forward stroke = 3° ; what must the angle of lead be for the return stroke so that the cut-off may be at one-fifth of the stroke on both sides. Also find the steam and exhaust laps, compression taking place through *one-ninth* of the stroke. How must an expansion valve with an eccentricity of 4-ins be set, so as to cut off steam simultaneously with the first?

Find the greatest distance between the two valve centres.

5. Describe the construction of an indicator, and name the principal causes of disturbances in indicator diagrams.

Sketch indicator diagrams, illustrating the following defects:—(*a*) too late admission of steam, (*b*) too early admission of steam, (*c*) late cut-off, (*d*) too early opening of exhaust. How would you remedy these defects?

6. Sketch in elevation and plan, giving rough dimensions, a crank, crank-pin, connecting-rod, piston-rod and piston suitable for the engine in Question 4, Paper I., showing how the several attachments are made.

7. Describe the action of the ordinary pendulum governor.

The governor spindle is driven by an endless cord passing round a 12-ins pulley on the fly-wheel shaft, the diameter of the pulley on the spindle being 8-ins. The engine has a stroke of 5-ft, and the mean velocity of the piston is 240-ft per minute; find the proper height of the point of suspension above the plane of the ball centres.

8. Show how to determine the proper volumes of the cold-water and feed-water pumps.

B.A. Sc. ADVANCED COURSE.

HEAT AND HEAT-ENGINES.

Examiner,.....HENRY T. BOVEY, M.A., A.M.I.C.E.

1. Write down the two fundamental equations of the mechanical theory of heat, and state the assumptions involved. Prove that,—

(*a*). At constant volume the energy is measured by the heat supplied.

(*b*). The loss of energy per unit of increase of volume (the expansion being adiabatic) is measured by the pressure.

(*c*). The fall of temperature per unit of increase in volume is equal to the increase in pressure per unit of heat taken in at constant volume multiplied by the absolute temperature.

2. Deduce the relation,

$$p.\ v. = a.\ T. - b.\ p^{\frac{1}{4}},$$

for superheated steam, stating all the assumptions involved and find the constants a and b.

3. An engine receives superheated steam at a pressure of 50-lbs. per sq. in. and a temperature of 300° F. If the steam expands to a pressure of 10-lbs. per sq. in., the temperature remaining constant, find,—

(*a*).—the heat imparted to each unit of steam during the change of pressure.

(*b*.)—the heat employed in interior work.

4. A condensing engine uses dry saturated steam at a pressure of 67-lbs., its temperature being 300° F, and the volume of 1-lb of the steam 6.32 cub. ft., the rate of expansion is 5, and the back-pressure 2½-lbs.; the water is returned to the boiler at the temperature of the condenser. Find, (*a*).—the energy of 1-lb. of steam; (*b*) the mean effective pressure; (*c*) the efficiency of the steam; (*d*) the net feed water per cubic ft. swept through by the piston.

(Assume latent heat of evaporation = 1114.4—.7t)

5. If the obliquity of the connecting rod is small, show that the velocity of the piston when the crank has turned through an angle θ from the line of stroke is approximately.

$$V_0 \left(sin.\ \theta + \frac{sin.\ 2\ \theta}{2.\ n.} \right)$$

V_0 being the velocity of the crank-pin and n the ratio of the crank to the connecting rod. Hence show how to deduce the pressure on the piston at any point of the stroke.

In the preceding question, n = 5, the number of revolutions per minute = 70, and W = the weight of the reciprocating parts, prove that the total pressure required to start and stop the piston at the end of the stroke = $\frac{1241}{30}$ W.

6. Describe the steam injector and deduce an equation giving the energy of motion imparted to the water. What considerations limit the proportions of steam and water, and the temperature of the water as it flows out of the condensation chamber? Show that the efficiency of an injector when employed to feed a boiler is perfect, and explain the advantages derived by the use of the injector as an ejector-condenser for condensing engines.

7. In a non-condensing engine there is a clearance c at each end of the cylinder whose total length is 2 c + h. Steam is cut off after the piston has travelled a distance x. When the piston has reached a position distant c + x from the other end, steam is admitted and cushions against the piston for the remainder of the stroke. Assuming the expansion to be adiabatic, show that the work per stroke will be a maximum if $\left(\frac{a+h}{a+x}\right)^{n-1} = n$, n being the ratio of the specific heats at constant pressure and volume.

Also show that the max. work per unit of area per stroke is $\frac{p.\ (a+x)}{n}$, p being the initial pressure of the steam.

SECOND YEAR.

DESCRIPTIVE GEOMETRY.

Examiner,.....C. H. McLEOD, MA. E.

1. Find the fourth proportional to three given lines.

2. Construct the cycloid generated by a circle of 3in. diameter. (*a*) Find the tangent to the curve at any point.

3. Assume any irregular figure of six sides and find a triangle of equal area.

4. The base of a right pyramid is a regular hexagon of 1in. side. The altitude of the pyramid is 3in. (*a*) Find the plan when its axis is at 45° to the horizontal and one edge of the base is in the horizontal. (*b*) Find the elevation when the edge which is in the horizontal makes an angle of 60° with the vertical.

5. A cone, radius of base 1 in., altitude 2 in. Show (*a*) a section by a plane at 45° to the base, and (*b*) the development of the cone surface showing the line of section.

6. Project isometrically a rectangular block of stone 2 ft. long, 1 ft. broad and 3 in. thick, having a cylindrical hole in the centre of 6 in. diameter. Scale *one-quarter*.

7. The horizontal and vertical traces of a plane make angles of 40° and 50° respectively with x y find a point in the plane 2 in. from each plane of projection.

(*a*) Find the projections of a line in the plane, when the line contains the point, and is inclined at 30° to the horizontal plane.

8. Find the horizontal projection of an angle of 120° when the lines containing it make angles of 30° and 40° with the horizontal plane.

SECOND YEAR.

SURVEYING.

Examiner,.....C. H. McLEOD, MA. E

1. Explain two methods of chaining on sloping ground. Which do you consider most accurate ?

2. Explain two methods of calculating areas (*a*) from the plat, (*b*) directly from the notes.

3. Describe the operation of *reversing* the magnetism of a magnetic needle.

4. Find where a perpendicular from a point meets a line (*a*) by trial, (*b*) by direct construction, without the aid of an angular instrument.

5. What do you understand by "local attraction"? (*a*) How does it affect a survey? (*b*) How is its effect obviated?

6. How would you plot a survey by means of latitudes and departures?

7. How would you find the azimuth of a line from an observation of *Polaris* at its greatest elongation? (*a*) Explain how you would determine, by observation, the precise moment at which the greatest elongation occurs. (*b*) The polar distance of Polaris at the present time is 1° 18′. Calculate the azimuth of the star at its greatest elongation?

8. How would you test for collimation error in a transit, and how would you adjust for it?

(*a*) How does this error affect the prolongation of a line and what means would you adopt to secure the straightness of your line.

9. Exhibit and illustrate by sectional diagrams a set of level notes in "setting out work."

The gradient is 1 per 100. The work to be set out for three stations of which one is in cutting and another in embankment.

10. Explain wherein underground differs from overground surveying and show how to connect the surveys under various conditions.

SECOND YEAR.

MECHANISM.

Examiner,.....C. H. McLeod, Ma. E.

1. Define simple harmonic motion. Represent the changes which occur in the velocity of the harmonic point (*a*) by a formula, (*b*) by a diagram.

2. What is the throw of an Eccentric?

3. Investigate the character of the motion which would be communicated by a swash-plate in a direction parallel to the axis of revolution of the plate.

4. In the slit-bar motion, represent graphically the angular velocity ratio between the bar and the crank, for any position. (*a*) Explain and illustrate the application of this principle to obtain a quick return.

5. What are the conditions to be observed in shaping the teeth on circular spur wheels in order that the velocity ratio may be constant. (*a*) Trace the path of contact between (1) a pair of epicycloidal teeth in gear, (2) a pin wheel and its rack, (3) involute teeth.

6. The projections of two lines of shafting on a plane parallel to both make an angle of 75°. It is required to connect them by a strap to run on pulleys of 20in. and 30in. diameter. Find the positions of the pulleys.

7. In an epicyclic train of three equal bevel wheels the first and last wheels are on the same axis. The first wheel turns twice per second, and the arm turns once in three seconds in a direction opposite to the first wheel. How many turns per second does the last wheel make? (*a*) How would you drive the arm of this train.

8. In connecting axes by Hooke's joints what conditions must be observed in order to secure uniform motion in the driven axis.

9. Mark on the accompanying indicator card taken from a steam engine (*a*) the point of cut-off, (*b*) closing exhaust, (*c*) opening exhaust, and (*d*) admission of steam.

10. Sketch, (*a*) a spur wheel reversing motion to obtain quick return, (*b*) three distinct forms of parallel motion, (*c*) the chronometer escapement, (*d*) Harrison's going barrel for maintaining the onward movement of a clock train during winding.

SECOND YEAR.

MOULDING AND FOUNDING.

Examiner,.....C. H. McLEOD, MA.E.

1. How would you classify moulding as regards the material used to form the moulds? State, generally, the kind of work done in each class.

2. Describe fully the process of moulding a cog-wheel.

3. Describe the formation of a core for a large pipe.

4. State the use of the following: glands, chaplets, core prints, drying stoves, traverses, loam-board.

5. Describe briefly the several qualities of pig-iron employed, and state the use for which each is peculiarly adapted. (*a*) Give a mixture of pig-iron and "scrap" suitable for car wheels.

6. Describe a cupola furnace, and its use (*i.e.*, charging, tapping, etc.)

7. How are malleable iron castings produced?

THIRD YEAR.

DESCRIPTIVE GEOMETRY.

1. One diagonal of an octahedron of 2in. edge is inclined at 30° and an adjacent edge is inclined at 45°. Draw its plan and an elevation on a plane not parallel to any edge of the solid.

2. Show the true form of a section of the octahedron in question I, by a plane parallel to one of the faces and 1 in. distant from that face.

3. There are two spheres and a point. Find the traces of the two planes which are tangent to the spheres and contain the given point.

4. A cone penetrates a sphere so that the axis of the cone meets a diameter of the sphere outside the surface of the sphere. Find the projections of the line of section.

5. In an axometric projection of a cube, two edges are represented at an angle of 150° and a third edge bisects this angle. Find the *scales*.

6. Describe and illustrate the following methods of map construction : (*a*) Mercators, (*b*) the equidistant polyconic.

7. Find the shadow cast on the horizontal by the object in question 1. The rays make angles of 30° with both planes.

8. Find the perspective projection of a regular hexagonal prism with its axis vertical, when it stands to the right and within the picture.

9. Find the perspective of an octagonal pyramid standing on a circular plinth. The edge of the plinth being in the foreground and to the left.

10. Find the perspective of the shadow caused by the object in question 8 or 9. Direction of rays at pleasure.

NOTE.—*Civil Engineering Students* may omit one of questions 2, 3, or 4 and question 8 or 9. *Mining Students* may omit 6, 7 and 10.

THIRD YEAR.

SURVEYING.

Examiner,..... .....C. H. MCLEOD, MA.E.

1. Adjust the sextant. (*a*) How would you obtain its index error.

2. What is the correction for refraction usually employed in trigonometrical levelling ? (*a*) Explain how to obtain a measure of refraction by observation.

3. Show that the difference in the elevations of two stations is proportional to the difference of the logarithms of the heights of the barometer readings at the stations. (*a*) How would you first correct the readings. (*b*) How does the condition of the air enter into the calculation of the difference in elevation.

4. What is the "establishment of the port ?

5. Exhibit one complete set of measurements of a second-class angle in a geodetic survey by a "direction" instrument, with three micrometers.

6. Explain the method upon which the blocks of townships in the Canadian N. W. lands surveys are set out. (*a*) Explain carefully how the parallels are run out.

7. In a geodetic survey the latitude of a station A was found to be 49° 4′, 25″ N. and of B 49° 22′ 33″ N. The azimuth of B from A 125° 45′ 21″. Find the distance AB on the spheroid.

8. In obtaining the meridian from equal altitudes of the sun show that the correction to the mean direction is

$$\text{Sec } \phi \text{ Cosec } \left(\frac{\text{Hour angle}}{2}\right) \left(\frac{\text{Change in declination}}{2}\right)$$

9. The equatorial intervals of an astronomical transit are + 31.45, + 15.72, + 0.02, —15.70, —31.40. Reduce the following observation made in declination 48° 13′ to the mean wire, the 4th and 5th wires having been omitted,— 9^h 13^m 10.4

34.2

57.9

.....

.....

10. Show that the correction for level is, in transit observations, represented by $b \cos (\phi - \delta) \sec \delta$.

METEOROLOGY.

Examiner, ... C. H. McLeod, Ma. E.

1. Show how to convert Fahrenheit readings into Réaumur and Centigrade.

2. What is the object which should be sought in *thermometer exposure?* What are the difficulties usually met with? What is the *sling thermometer?*

3. Explain the construction and use of the *black bulb* thermometer. (*a*) How would the readings of a *black bulb* compare with those of a *bright bulb* similarly enclosed? Why so?

4. How are barometer readings reduced?

5. Wherein does a vapour differ from a gas?

6. What is the usual indirect form of hygrometer, and by what means have the tables used in connection with it been constructed.

7. State some of the causes which produce rain.

8. Given the direction and mileage of the wind for each hour during a week or month, show how you would find the resultant direction and mileage.

9. Describe :—fog bows, coronæ, glories, parhelia, looming.

FIRST YEAR.

CHEMISTRY.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. Explain the use of the common blowpipe, and distinguish between an oxydising and a reducing flame.

2. Describe the spectroscope and explain its use in chemical analysis.

3. Give equations to represent the changes which take place in each of the following cases :—(1) When Hydrochloric Acid is added to a solution of Lead Nitrate. (2) When Sulphuric Acid is added to a solution of Barium Chloride. (3) When a solution of Argentic Nitrate is added to one of Hydrogen Disodium Phosphate. (4) When Sal-ammoniac and Quicklime are heated together.

4. Into how many groups are the metals divided for purposes of analysis? Name the metals in each and give the group reagents.

5. How would you distinguish (*a*) a salt of Bismuth from one of Tin, (*b*) a salt of Cadmium from one of Arsenic, (*c*) a salt of Calcium from one of Magnesium?

6. How would you distinguish a Tartrate from an Oxalate, a Sulphite from a Sulphate, a Sulphate from a Phosphate, a Chloride from a Nitrate?

7. How may Carbon, Hydrogen and Nitrogen be detected in organic substances?

8. State what you know with regard to the manufacture of (*a*) Common Salt, (*b*) Sodium Carbonate, (*c*) Nitre.

9. Give the names and uses of each of the following reagents :— K_3FeCy_6, $Pb(C_2H_3O_2)_2$, $Ba(NO_3)_2$, $(H_4N)_2CO_3$, $KCyS$, $NaPO_3$, CS_2, $Co(No_3)_2$.

10. What are the objects of treating substances (*a*) upon charcoal and (*b*) in closed tubes? Give examples.

THIRD YEAR.

MINERALOGY AND LITHOLOGY.

Examiners,..... { SIR J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., Ph.D.

1. By what simple test may the ores of iron be distinguished?

2. State what you know with regard to Lignite and its occurrence in Canada.

3. Describe the Jolly balance, and explain its use in determining the specific gravity of minerals.

4. Explain the distinctions between wholly crystalline, semi-crystalline, glassy and elastic Rocks.

5. What are some of the principal characteristics of Volcanic rocks? Name the more important rocks of this group, and describe two of them.

6. Describe the principal varieties of Granite. A distinction has been made between exotic and endogenous Granites. Explain it.

7. What do you understand by perlitic, spherulitic, and porphyritic structures?

8. How is it possible in many instances to ascertain what minerals are present in rocks which are so fine-grained as to appear homogenous to the eye?

9. Describe each of the following rocks briefly, and state what you know with regard to their origin :—Gneiss, Diorite, Syenite, Sandstone, Quartzite, Fire-clay.

10. Describe carefully each of the rocks exhibited, and state what you know concerning their geological relations.

SECOND YEAR (*Mining and Chemistry Courses*).

CHEMISTRY.

(Answer only ten questions.)

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Explain the use of the asbestos thread and the charcoal splinter in the detection of metals.

2. What takes place when Chlorides are heated with Manganese Dioxide and Sulphuric Acid? Give the equation and the quantities of the materials which take part in the reaction.

3. How many litres of Carbonic Oxide can be made from 100 grammes of crystallized Oxalic Acid?

4. Give equations indicating the changes which take place in any two of the following cases :—(1) When Hydric Sulphide is added to a solution of Ferric Chloride. (2) When Ammonium Sulphide is added to a solution of Aluminium Sulphate. (3) When Arsenious Sulphide is dissolved in Ammonium Sulphide. (4) When a solution of Barium Chloride is added to one of Hydro-disodium Phosphate.

5. What is the action of Ammonia upon Mercurous Chloride? Give the equation.

6. How much Nitric Acid can be made from 50 grammes of Potassium Nitrate? How much from the same quantity of Sodium Nitrate? How much Sulphuric Acid would be required in each case?

7. Name the metals of the Third Group and describe their separation.

8. What metals are thrown down from aqueous solutions: (*a*) by Hydrochloric Acid, and (*b*) by Sulphuric Acid?

9. Give the formulæ of the following substances:—Chromium Oxychloride, Lead Chromate, Boric Acid, Ammonium Oxalate, Silver Arsenite, Potassium Ferricyanide.

10. How would you distinguish Brucine from Morphine, and Quinine from Cinchonine?

11. State what you know with regard to the chemical characters of Grape Sugar and Casein.

12. Name the principal inorganic acids which are precipitated (*a*) by Barium Chloride, and (*b*) by Silver Nitrate.

13. A solution contains the chlorides of Antimony, Bismuth, Manganese, Barium, Magnesium and Potassium. Describe its qualitative analysis.

THIRD YEAR (*Mining Course*).

CHEMISTRY.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Into what groups are the inorganic acids divided for purposes of analysis? What are the group-reagents?

2. A specimen of Heavy Spar contains Strontium, Calcium and Iron. How would you detect their presence?

3. Describe the separation of the metals of the Second Group.

4. How would you make a quantitative analysis (*a*) of a specimen of Copper Pyrites, and (*b*) of a specimen of Tetrahedrite?

5. Potassium Permanganate is added to a solution containing Ferrous Sulphate and free Sulphuric Acid. What changes take place? Give the equation.

6. Magnesia mixture is added to a solution containing 1 gramme of common Sodium Phosphate. What is the weight of the precipitate produced? What its composition? What is the precipitate converted into by ignition? What should the ignited substance weigh?

7. How would you detect the presence of Manganese in a specimen of Spathic Iron Ore? How determine the quantity of Manganese?

8. Describe the quantitative analysis of a specimen of Calcite containing small quantities of Iron and Magnesia.

9. A gramme of Witherite was dissolved in Hydrochloric Acid and Sulphuric Acid added to the solution. The resulting precipitate weighed 11.83 grm. What per cent of Barium does the mineral contain?

10. A solution of Caustic Potash was exactly neutralized by half a gramme of crystallized Oxalic Acid; what weight of Potassium was present?

11. How would you distinguish a Lignite from a Bituminous Coal? How make an analysis of either?

B. A. Sc. EXAMINATION (*Chemistry Course*).

CHEMISTRY.

Examiners,..... { G. P. GIRDWOOD, M.D., M.R.C.S.
B. J. HARRINGTON, B.A., Ph.D.

1. The percentage composition of a compound is: Carbon, 24·24; Hydrogen, 4·04; Chlorine, 71·72. Its vapour density is 49·5. Calculate its formula.

2. Describe V. and C. Meyer's method for determining vapour densities, and from the following data determine the vapour density of Chloroform:

Weight of substance.....	0·1008 grm.
Temperature of water.....	16°5 C.
Barometric pressure reduced to 0°.....	707·5 mm.
Tension of aqueous vapour.....	14·74 mm.
Volume of air.....	22 cc.

3. Chromium, Iron and Aluminium are present as Chlorides in the same solution. Describe their separation.

4. Describe the method of Berzelius and Rose for the analysis of complex Sulpho-salts.

5. How would you separate Manganese from Zinc, if both metals were present in the same solution as Acetates? If present as Chlorides how could you readily convert them into Acetates?

6. Fifty-nine grammes of Metallic Tin were dissolved in Hydrochloric Acid, and Chlorine gas passed into the solution in order to convert the Stannous into Stannic Salt. How many litres of Hydrogen were given off in the first process and how many of Chlorine taken up in the second?

7. How would you determine the proportions of Copper and Tin in an alloy of these metals?

8. What do you understand by the indirect determination of Potassium and Sodium?

9. How would you determine the proportions of Ferrous and Ferric Iron in an insoluble Silicate?

10. Describe (*a*) the detection of Nitrogen in an organic substance, and *b*) its estimation by conversion into Ammonia.

B.A. Sc. EXAMINATION (*Mining Course*).

ASSAYING.

Examiner,.....B. J. HARRINGTON, B.A., Ph. D.

1. State fully the precautions to be taken in preparing samples for assay.

2. What is the theoretical percentage of Lead in Galena? What percentage can be obtained by the best methods of fire-assay?

3. Describe the estimation of Copper (*a*) by precipitation with Iron, and (*b*) by means of a standard solution of Potassium Cyanide.

4. Name the principal ores of Copper, and give their composition.

5. In a determination of Sulphur in coal one gramme of coal was taken and the Barium Sulphate obtained weighed 0·164 grm. What percentage of Sulphur does the coal contain?

6. How would you determine the proportion of Silver (*a*) in an Argentiferous Sphalerite, and (*b*) in an Argentiferous Chalcocite?

7. Describe a method for the assay of Zinc ores in the wet way.

8. Upon what does the valuation of a Manganese ore generally depend? Describe the valuation of a specimen of Pyrolusite containing some intermixed Calcite.

9. How could you determine the amount of free Gold in an ore.

10. How would you ascertain the value of each of the specimens exhibited.

THIRD YEAR (*Mining Course*).

BLOWPIPE ANALYSIS AND DETERMINATIVE MINERALOGY.

Examiner,.....B. J. HARRINGTON, B.A., Ph. D.

1. Explain the uses of the following reagents in blowpipe analyses:—Potassium Cyanide, Potassium Iodide, Cupric Oxide, Calcium Fluoride, Magnesium.

2. Describe the operation of roasting a mineral. What is its object?

3. In the absence of coal-gas what fuels are best adapted for blowpipe work?

4. State what takes place on heating each of the following substances in a closed tube:—Pyrolusite, Cinnabar, Arsenopyrite, Siderite, Fluorite, Tellurium.

5. What minerals constitute the scale of fusibility? Describe the manner of using the scale?

6. Give blowpipe tests for the detection of (*a*) Boron, (*b*) Fluorine, (*c*) Chlorine, (*d*) Sulphur, in Silicates.

7. How would you determine the specific gravity of a mineral (*a*) with the specific gravity bottle, (*b*) with Nicholson's hydrometer, (*c*) with Walker's balance?

8. By what simple tests would you distinguish Jamesonite from Stibnite, Chalcocite from Tetrahedrite, Molybdenite from Graphite, and Cassiterite from Rutile?

9. What are the blowpipe characters of the following minerals: Stilbite, Orthoclase, Tourmaline, Sphalerite, Menaccanite?

10. Explain the terms decrepitation, intumescence, gelatinization, deflagration.

THIRD YEAR (*Mining and Chemistry Courses*).

MINERALOGY.

Examiners,..... { Sir J. W. Dawson, LL.D., F.R.S.
B. J. Harrington, Ph.D., F.G.S.

1. Distinguish between hemiholohedral and holohemihedral forms, giving examples.

2. State fully what is the cause of the brilliancy of such minerals as the Diamond, Anglesite and Sphalerite.

3. Explain the distinction between uniaxial and biaxial crystals. Give also the significance of the terms acute bisectrix, obtuse bisectrix, and optic axial plane.

4. What are the different methods of twinning in Orthoclase? Describe each fully.

5. Explain the use of dense solutions in the determination of specific gravities, and give the composition of Rohrbach's solution.

6. What are the leading characteristics of the Triclinic System of Crystallography. Explain the notation of the faces.

7. Enumerate the principal hemihedral forms of the Isometric System, and give their symbols.

8. What is a sphenoid, a scalenohedron, a hemidome, a clinopinacoid, a gyroidal form?

9. Explain polymorphism and isomorphism, and give several examples of each.

10. What are pseudomorphs, and in what ways are they produced?

11. Describe fully each of the specimens exhibited.

DETERMINATIVE MINERALOGY.

Afternoon, 2 to 5.

This examination will be held in the Chemical Laboratory.

B.A. Sc. (*Mining and Chemistry Courses*).

LITHOLOGY (including Microscopic Characters of Minerals).

Examiners,..... { SIR J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. Name the principal rock-forming minerals, and state into what groups they may be divided.

2. What are the optical characters, (*a*) of Hexagonal and (*b*) of Monoclinic, minerals as studied in their sections with the polarization microscope?

3. Give the microscopic characters of Nepheline, Olivine and Microcline. In what rocks do these minerals occur?

4. Muscovite and Biotite are at present in the same rock section. How would you distinguish them?

5. If Quartz and Sanidine were present in the same rock-section how would you distinguish them?

6. Explain the terms Micro-crystalline, Crypto-crystalline, Micro-felsitic.

7. How would you distinguish: (*a*) Diabase from Diorite, (*b*) Trachyte from Liparite.

8. What are principal characteristics of the so-called Vitreous rocks?

9. Melaphyre, Porphyrite, Norite. State what you know with regard to the characteristics and mode of occurrence of these rocks.

10. Describe Quartzite, Argillite and Mica schist, and discuss their origin.

11. Discuss the Question of Rock-classification, pointing out the chief difficulties which have to be encountered in all attempts to group rocks in a natural way.

12. Name and describe the specimens exhibited.

B. A. Sc. (*Mining and Chemistry Courses*).

MINERALOGY.

Examiners,..... { Sir J. W. Dawson, LL.D., F.R.S.
B. J. Harrington, Ph.D., F.G.S.

1. Give a synopsis of the principal hexagonal forms with their symbols.

2. Distinguish (*a*) between inclined and parallel hemihedrons, (*b*) between vertically direct and vertically alternate hemihedrons, and (*c*) between pyramids of the first, second and third orders in the tetragonal system.

3. Two minerals (*a* and *b*) gave on analysis the following results. Calculate their formulæ and give their names:

	a	*b*
Silica	40.2	42.9
Alumina	22.6	37.0
Lime	37.2	20.1
	100.0	100.0

4. Name the principal tetragonal Silicates, and describe two of them.

5. What are the forms exhibited by crystals of Canadian Apatite?

6. Give in tabular form the names and distinguishing characters of the principal Zeolites.

7. Characterise each of the following substances briefly, and state to what species they belong:—Leucoxene, Colophonite, Essonite, Piedmontite, Bronzite, Cummingtonite, Picotite, Freibergite.

8. State what you know with regard to the lustre and cleavage of each of the following minerals: Stibnite, Sphalerite, Diamond, Orthoclase, Pyroxene, Topaz, Gypsum, Halite.

9. Give the crystalline form, hardness, and specific gravity of Nephelite, Prehnite, Chrysolite, Arsenopyrite, Cinnabar, Proustite.

10. What are the blowpipe characters of Molybdenite, Pyrargyrite, Zincite, Wollastonite, Beryl, Lepidolite, Pyramorphite and Malachite?

Specimens.—Afternoon, 2 to 4.

Name and describe the specimens exhibited. State also what you know with regard to their geological relations.

THIRD YEAR (*Mining Engineering*).

MINING.

Examiner,..... .. ..B. J. HARRINGTON, PH.D., F.G.S.

1. In searching for the continuation of a faulted coal-seam by what points would you be guided ?

2. What are the conditions determining natural ventilation in a mine ? In so far as ventilation is concerned what advantage is there on increasing the sectional area of an air-way ?

3. Describe any simple methods for producing a current of air while sinking a shaft or driving an adit.

4. Where ladders are employed in mines how should they be constructed ? How arranged in the shafts ?

5. What precautions have to be observed in selecting a site for a shaft ? What are the respective advantages of vertical and underlie shafts ?

6. Explain briefly the Poetsch system of sinking shafts in watery ground.

7. How would you construct a horse-whim ? Give sketch and approximate cost.

8. The thickness of a coal-seam, its inclination and cleat. How do these influence the selection of a method for the working of the seam ?

9. What is panel-working ? What are its advantages ?

10. Underground roadways. State what you know with regard to them.

11. What are the principal points to be observed in the examination of any region of country for economic minerals ?

12. Explain each of the following terms :—Costeaning, Wedging-Curb, Brattice, Trouble, Stockwork, Room and Rance.

B.A. Sc. EXAMINATION (*Mining and Chemistry Courses*).

METALLURGY.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Characterise briefly the different ores of Iron. What impurities are they most liable to contain ? What becomes of the impurities when the ores are reduced in the blast-furnace ?

2. State what you know with regard to the composition of blast-furnace slags. Upon what does their degree of fusibility and fluidity depend ? What substances often impart characteristic colours to them ?

3. What are the advantages of a hot blast in Iron smelting ? How is the hot blast produced, and what effect has it upon the character of the Iron ?

4. Upon what grounds are the distinctions between Iron and Steel based?

5. Describe some of the best appliances for raising ores, etc., to the top of blast-furnaces.

6. Explain each of the following terms:—Cold Shortness, Burden, Tymparch, Cinder Pig, Scouring Cinder, Scaffolding, Cementation, Converter Regenerator.

7. What are the principal methods employed in the desilverisation of Argentiferous Lead? Describe one of them.

8. Describe (*a*) Ziervogel's and (*b*) Claudet's process for the extraction of Silver, stating the circumstances in which they are applicable.

9. In the case of Lead ores what considerations determine the method of reduction to be followed? How may the various processes be grouped? Describe one method for the reduction of Galena.

10. Name the more important methods for the extraction of Copper from its ores, and give a brief outline of two of them (wet and dry).

11. Distinguish between wet and dry methods of Gold parting, and give examples of each.

12. Describe the manufacture (*a*) of Galvanised Iron and (*b*) of Tin Plates.

EXAMINATION FOR LANSDOWNE MEDAL.

THEORETICAL CHEMISTRY.

Examiners,..... { G. P. Girdwood, M.D., M.R.C.S.
B. J. Harrington, B.A., Ph.D.

1. What are the chief classes of derivatives which may be obtained from Hydrocarbons?

2. Explain the principle involved in the building up of complex Hydrocarbons from simpler ones?

3. How is Acetyl Chloride obtained? Explain its use as a reagent in the examination of compounds of Carbon.

4. What is the result of treating Sodium Methylate with Iodo-Ethane?

5. Explain by means of structural formulæ the supposed differences in the constitution of Ethylene Chloride and Ethylidene Chloride.

6. Explain how, by starting with Methyl Alcohol and passing through the Cyanide, Acetic Acid may be made.

7. To what class of bodies does Glycerin belong? What are the steps according to which it may be made synthetically from Propylene Chloride? What takes place when Glycerin and Oxalic Acid are gently heated together?

8. What are Nitro-Compounds? By what reactions are the Nitro-derivatives of Benzine and Methane obtained? What is the action of nascent Hydrogen upon the Nitro-derivatives?

9. Why, on theoretical grounds, is only one variety of Propane possible? How many Butanes are possible theoretically? Name them, and explain their supposed constitution.

10. How may the synthesis of Napthalene or Anthracene be effected? Explain the constitution of either body.

EXAMINATION FOR LANSDOWNE MEDAL.

TECHNICAL CHEMISTRY.

Examiners, ... { G. P. Girdwood, M.D., F.R.S.C.
B. J. Harrington, B.A., Ph.D

1. Explain the use of the Gay-Lussac and Glover towers in the manufacture of Sulphuric Acid.

2. Describe the continuous rectification of Sulphuric Acid in glass vessels.

3. How many tons of Pyrites containing 42 per cent. of Sulphur are required to make 50 tons of Oil of Vitriol containing 70 per cent. of $H\ SO_4$?

4. What are the principal impurities in commercial Hydrochloric Acid? What their source? How may they be detected?

5. Desc ibe the manufacture of Nitric Acid. What impurities is the Acid likely to contain? How may it be purified?

6. If Sodium Nitrate sold for the same price per ton as Potassium Nitrate, which would be the cheaper salt to employ in the manufacture of Nitric Acid? Give the ratio of the value of the two materials.

7. Describe the Quick Vinegar process, giving the theory as to the chemical changes which take place.

8. What is Alkali-makers waste? Explain Mond's process for the recovery of Sulphur from the waste.

9. How is Nitre made commercially from the native Potassium Chloride?

10. Describe the rectification of Alcohol. How is the Fusel Oil separated?

UNIVERSITY SCHOOL EXAMINATIONS.

UNIVERSITY SCHOOL EXAMINATIONS,

PRELIMINARY SUBJECTS.

GEOGRAPHY.

Examiners, ... { PROF. G. CORNISH, LL.D.
PROF. A. C. SCARTH, M.A.
PROF. P. C. READ, M.A.
R. W. BOODLE, B.A.

1. What is meant by:—Delta, estuary, coast, range, archipelago, cape, current?

2. Describe the course of the rivers Fraser and Yang-tse-kiang.

3. Give the position of, and some facts concerning:—Copenhagen, Venice, Novgorod, Teheran, Mocha, Disko, Sitka, Topeka, St. John, St. John's, Liberia, Rangoon.

4. Give the boundaries of the Russian Empire and of Bulgaria.

5. What are the leading physical features of the Province of Quebec, and of Newfoundland?

6. What is the cause of "seasons"?

7. What do you know of Corea?

GOSPELS.

Examiners, ... { PROF. A. G. CORNISH, LL.D.
PROF. A. C. SCARTH, M.A.
PROF. P. C. READ, M.A.
R. W. BOODLE, B.A.

1. (*a*) Give the derivation and meaning of the terms:—Gospel, Apostle, Disciple and Evangelist. (*b*) Who of the writers of the four Gospels were Apostles and who Evangelists?

2. Give the substance of St. Matthew's account of the Temptation, and compare it with the narrative of St. Mark.

3. What are the leading characteristics of St. Mark's Gospel?

4. Narrate, as concisely as you can:—(1) The Parable of the Good Samaritan; *or* (2) That of the Prodigal Son; *or* (3) Our Lord's conversation with Nicodemus.

5. Name parables peculiar to St. Luke's Gospel, and Miracles peculiar to St. John's Gospel.

6. (*a*) What is meant by the term Decapolis? (*b*) Name events that occurred at:—Capernaum, Nain, Emmaus, Bethany, Nazareth, and Cana of Galilee.

ENGLISH GRAMMAR.

Examiners,..... { Prof. G. Cornish, LL.D.
Prof. A. C. Scarth, M.A.
Prof. P. C. Read, M.A.
R. W. Boodle, B.A.

1. Explain with instances the following grammatical terms: Diphthong, Co-ordinate Clause, Superlative, Demonstrative, Auxiliary.

2. Give the feminines of *abbot*, *testator*, *fox*, *don*, *buck*, *wizard*. Mention four lifeless objects personified in poetry, and the gender they receive.

3. Give five *distinct* modes of forming the plural of nouns with one instance of each.

4. Write down the first person singular indicative active of the past of *to write*, giving each form (simple, progressive, &c.) and the name of each.

5. Write down the past and past participle of *fell*, *fall*, *go*, *see*, *beat*, *lose*, *loose*.

6. Distinguish between *proper*, *common*, *collective* and *abstract* nouns, giving one instance of each. What parts of speech can an Adverb qualify? Give instances.

7. Write the following lines as they would appear printed in a modern book:—

> " and put the same into yong *arthurs* hand
> thy Nephew and right royall Soueraigne,"

adding stops, capitals, &c., where necessary.

8. Analyse the following sentence, parsing the words italicised:—

> " The tear down *childhood's cheek that flows*
> *Is like* the *dew-drop* on the rose."

In parsing mention part of speech, kind, with for nouns, &c., case and why; for verbs, tense and person.

ARITHMETIC.

Examiners,..... { Rev. Principal Adams, M.A.
G. H. Chandler, M.A.

1. Express $\overline{\text{CLXX}}\text{DCCVII}$ in Arabic, and 2675 in Roman notation.

2. Find the difference between $29{\cdot}7 \times 4{\cdot}0\dot{5}$ and $29{\cdot}\dot{7} \times 4{\cdot}0\dot{5}$.

3. Find the greatest common measure and least common multiple of 650 and 962.

4. The 7.10 train from Quebec passes A, a distance of 13 miles, at 7.36; if it travels at a uniform rate when will it reach B, a distance of 193 miles from Quebec?

5. Multiply $\frac{1}{3} + \frac{1}{4}$ of $\frac{3}{5}$, by $\frac{7}{20}$ of $6\frac{1}{4} \times \frac{1}{25}$.

6. A clock gains 5 seconds in every hour it indicates; how should it be set at 6 p.m. on Saturday so as to denote correct time at 9 a.m. the following Monday.

7. If 792 inches make one chain, calculate the number of square chains in one acre.

8. By selling goods at $17.50 I lose $12\frac{1}{2}$ per cent.; at what price should I sell to gain 10 per cent.?

9. A gallon of water weighs 10 lbs., and a cubic foot weighs 1000 ounces; how many gallons will a rectangular box 6 feet long, 4 feet wide, and 2 feet deep contain?

10. Find the square of 225, and the square root of 197·4025.

11. What is the simple interest on $346.27 for 3 years 6 months and 10 days at 7 per cent. per annum?

12. In what time will $560 amount to $576.80 at 4 per cent.; and at what rate will $1680 amount to $1730.40 in 9 months, simple interest?

BRITISH AND CANADIAN HISTORY.

Examiners, ... { Prof. G. Cornish, LL.D.
Prof. A. C. Scarth, M.A.
Prof. P. C. Read, M.A.
R. W. Boodle, B.A.

[N.B. *Questions* 1, 2, 3, 4, 6, 7, 9, *should be answered very concisely*.]

1. Name the *seven* chief Saxon kingdoms; describe (if possible, by a map) the position of each; mention to which Hengist, Ethelbert, Edwin, Offa, and Egbert belonged, as well as one important fact about each.

2. Name *six* ecclesiastics who played a prominent part in the history of Great Britain or Canada, the reigns in which they lived, and what gives them their importance.

3. In whose reign did the following battles or sieges take place, which side was victorious, and under what commander, and what gives the events their importance in history: Bannockburn, Bosworth, Hastings, Lewes, Naseby, Navarino, Orleans, Quebec, Saratoga, Waterloo?

4. In regard to the following Acts, mention the leading changes they made in the boundaries or divisions of Canada, and one other fact in relation to each: Quebec, Constitutional, Union, British North America.

5. Explain the nature of the following; to whose reign should they be referred: Abolition of Slavery—Crown made Head of the Church—Disruption in Scotch Church—Dissolution of Monasteries—Habeas Corpus—Judgment of Peers—Reformation of the Calendar—Removal of Penal Laws against Catholics—Ship Money?

6. What European explorers first visited the Bahamas, Bay of Fundy, Hochelaga, Lake Nipissing, the Mississippi, Newfoundland? Who founded Kingston, Montreal, Ottawa, Port Royal, Quebec, and what other names have these places had?

7. When did the following live, and for what are they remembered: Boadicea, Claverhouse, Daulac, Lyon Mackenzie, Marlborough, Ralph Flambard, Raleigh, Walpole, Warren Hastings, Wat Tyler?

8. Explain clearly the following expressions: "All the trees were drunk," Beauclerc, Benevolences, Defender of the Faith, Family Compact, Great Commoner, *Ich dien*, North Briton, Six Nations, Whig.

9. Write a list of the kings of England during the eighteenth century with the date of their accession. What events occurred in the following years: B.C. 55, A.D. 1096, 1172, 1282, 1347, 1455, 1588, 1640, 1660, 1689?

10. Explain Edward IV's claim to the throne and the circumstances that enabled him to make it good.

11. Describe the Battle of Chateauguay, *or* the steps that lead to the Settlement of Upper Canada.

12. Outline the Reign of Mary Stuart before she fled to England, *or* the State of Ireland during the Saxon period.

OPTIONAL SUBJECTS.

LATIN.

Examiners,..... { Rev. George Cornish, LL.D.
Rev. Canon Norman, D.C.L.

1. Translate, Virgil Aen. VI.:—

(*a*) Portitor has horrendus aquas et flumina servat
terribili squalore Charon: cui plurima mento
canities inculta jacet; stant lumina flamma;
sordidus ex humeris nodo dependet amictus.
Ipse ratem conto subigit, velisque ministrat,
et ferruginea subvectat corpora cymba
jam senior; sed cruda deo viridisque senectus.
Huc omnis turba ad ripas effusa ruebat,
matres atque viri, defunctaque corpora vita
magnanimum heroum, pueri innuptaeque puellae,

impositique rogis juvenes ante ora parentum ;
quam multa in silvis autumni frigore primo
lapsa cadunt folia, aut ad terram gurgite ab alto
quam multae glomerantur aves, ubi frigidus annus
trans pontum fugat, et terris immittit apricis.

(2.) Translate the following detached passages :—(*a*) Cæca regens filio vestigia. (*b*) Nec mortale sonans. (*c*) Majorque videri. (*d*) Gelidus Teucris per dura cucurrit ossa tremor. Explain the constructions in (*b*) and (*c*) and the word Teucris in (*d*).

3. Derive :—Remigium, attonitæ, canoris, auricomes, feretro, pateris, habenas, brumali.

4. Translate, Cicero, Pro Marcello :—

(*b*) Omnia sunt excitanda tibi, C. Caesar, uni, qua jacere sentis, bell ipsius impetu (quod necesse fuit) perculsa atque prostrata : constituenda judicia, revocanda fides, comprimendæ libidines, propaganda soboles : omnia, quæ dilapsa jam fluxerunt, severis legibus vincienda sunt. Non fuit recusandum, in tanto civili bello, tantoque animorum ardore et armorum, quin quassata respublica, quicumque belli eventus fuisset, multa perderet et ornamenta dignitatis, et præsidia stabilitatis suæ : multaque uterque dux faceret armatus, quæ idem togatus fieri prohibuisset. Quæ quidem tibi omnia belli vulnera curanda sunt ; quibus, præter te, mederi nemo potest. Itaque illam tuam præclarissimam et sapientissimam vocem invitus audivi : "Satis diu vel naturæ vixi, vel gloriæ." Satis, si ita vis naturæ fortasse ; addo etiam, si placet, gloriæ : at (quod maximum est) patriæ certe parum. Quare, omitte, quæso, istam doctorum hominum in contemnenda morte prudentiam : noli nostro periculo sapiens esse.

5. (*a*) Give the English of the following single passages :—(*a*) Nihil sibi exista laude centurio, nihil præfectus, nihil cohors, nihil turmadecerpit. (*b*) Mea consilia pacis et togæ socia, non belli atque amorum fuerunt. (*c*) Non modo excubias et custodias, sed etiam laterum nostrorum oppositus et corporum pollicemur.

(*b*) Explain the expressions :—(*a*) Mediusfidius ; (*b*) auxilia sociorum ; (*c*) locorum opportunitas ; (*d*) orationem civium pacem flagitantium repudiari.

6. Translate, Cæsar, Bell. Gall. III :—

(*c*) Brevi spatio interjecto, vix ut *his rebus*, quas constituissent, *collocandis* atque *administrandis* tempus daretur, hostes ex omnibus partibus, *signo dato*, decurrere, lapides gæsaque in vallum conjicere : nostri primo *integris viribus* fortiter repugnare, neque ullum frustra telum ex loco superiore mittere : ut quæque pars castrorum nudata *defensoribus* premi videbatur eo occurrere, et auxilium ferre : sed hoc superari, quod *diuturnitate* pugnæ hostes defessi prœlio excedebant, alii integris viribus succedebant. *quarum rerum* a nostris propter paucitatem fieri nihil poterat ; ac non modo defesso ex pugna excedendi, sed ne saucio quidem ejus loci, ubi constiterat, relinquendi, ac *sui* recipiendi, facultas debatur.

7. (*a*) Show the construction of the oblique cases printed in italics in ext. (*b*) Quum *circumsteterant* ;—quum *reperiretur* :—Distinguish between these uses of mood with *quum*. Why is the imperfect used in the latter instance ? (*c*) Una erat magno usui res præparata a nostris :—What use of the Dative ?

8. Write short explanatory notes on :—(1) Naves longæ. (2) Iter per Alpes. (3) Vallum complere. (4) Muralium falcium. (5) Hora quarta. (6) Sub corona vendidit. (7) Decumana porta. (8) Vineas turresque egit.

9. (*a*) Write down :—The *Dat. Sing.* and *Gen. Plu.* of :—honos, pes pons, palus, laus, nix, pedes, poema. (*b*) The *Accus Sing.* and *Dat. Plu.* of :—vis, flos, avis, arx, latus, domus, mas, filia. (*c*) Decline in the *Sing* : cupido, carcere, deus, pulvis, nemo ; in the *Plu* :—iter, mos, duo, origo, comes ; and in *Sing* and *Plu* :—uter, alius, quis, ille.

10. (*a*) Show the different meanings in the *Sing.* and the *Plu.* of :—ædes, auxilium, carcer, copia, comitium, litera. Give the Plurals of locus, with their meanings. (*b*) Give the Degrees of comparison of :—Utilis, felix, sacer, pulcher, facile, audacter, niger, sæpe. (*c*) Write down the 1st *Sing.* and the 1st *Plu.* of the Tenses of the Subjunctive of *possum* ; and the 3rd *Plu.* of the Tenses of the Indicative of *utor*.

11. (*a*) Write the principal parts of :—vive, credo, noceo, sumo, parco, cado, edo, (*both*), lego (*both*), pono, vinco. (*b*) Which of the above verbs are followed by the Dative ? What cases follow :—de, apud, in, sub, super, coram, ob, per, severally ?

12. Turn into Latin ;—(1) I have a few books (use both *esse* and *habere*). (2) The generals had three horses each. (3) It is not every one can do that. (4) The money which I have is small. (5) He commands me to go away from home.

GREEK.

Examiners, ... { Rev. George Cornish, LL.D.
Rev. Canon Norman, D.C.L.

1. Translate, Homer, Iliad Book IV. :—

(*a*) Ὡς δ' ὅτε τίς τ' ἐλέφαντα γυνὴ φοίνικι μίηνῃ
Μηονὶς ἠὲ Κάειρα παρήϊον ἐμμεναι ἵπποις·
Κεῖται δ' ἐν θαλάμῳ, πολέες τέ μιν ἠρήσαντο
Ἱππῆες φορέειν· βασιλῆϊ δὲ κεῖται ἄγαλμα,
Ἀμφότερον, κόσμος θ' ἵππῳ ἐλατῆρί τε κῦδος·
Τοῖοί τοι, Μενέλαε, μιάνθην αἵματι μηροὶ
Εὐφνέες κνῆμαί τ' ἰδὲ σφυρὰ κάλ' ὑπένερθεν.

(*b*) Οἱ δ' ὅτε δή ῥ' ἐς χῶρον ἕνα ξυνιόντες ἵκοντο,
Σὺν ῥ' ἔβαλον ῥινούς σὺν δ' ἔγχεα καὶ μένε' ἀνδρῶν
Χαλκεοθωρήκων· ἀτὰρ ἀσπίδες ὀμφαλόεσσαι
Ἔπληντ' ἀλλήλῃσι, πολὺς δ' ὀρυμαγδὸς ὀρώρει.
Ἔνθα δ' ἅμ' οἰμωγή τε καὶ εὐχωλὴ πέλεν ἀνδρῶν
Ὀλλύντων τε καὶ ὀλλυμένων· ῥέε δ' αἵματι γαῖα.
Ὡς δ' ὅτε χείμαῤῥοι ποταμοὶ κατ' ὄρεσφι ῥέοντες
Ἐς μισγάγκειαν ξυμβάλλετον ὄβριμον ὕδωρ
Κρουνῶν ἐκ μεγάλων, κοίλης ἐντοσθε χαράδρης·
Τῶν δέ τε τηλόσε δοῦπον ἐν οὔρεσιν ἔκλυε ποιμήν·
Ὣς τῶν μισγομένων γένετο ἰαχή τε πόνος τε.

2. (*a*) what is meant by the term *Epic* as applied to the language of Homer? Point out Epic forms in the above extracts and give the equivalent forms in Attic. (*b*) Give the name and scale of the metre, and scan the last four verses of ext. (*b*), noting any metrical peculiarities.

3. (*a*) Write down the *Nom. Sing.* and *Plu.* of :—*ἔλεφαντα, φοίνικι, ἐλατῆρι, μένε', αἵματι, ὄρεσφι, ἱδρῶ, κέρα, πολέος, πόλιος.* (*b*) Give as carefully as you can the derivation and meaning of the following :—*αἰολοθώρηξ, ζωστήρ, ὀχῆες, ὑπερκύδαντας, ἀσπερχές, φύλοπιν, παραβλήδην.*

4. (*a*) Translate, explaining the construction :—(*a*) *μοι πέρι κῆρι τέσκετο.* Another reading is *περὶ*,—with what difference? (*b*) *θάνατόν νύ τοι ὅρκι' ἔταμνον.* (*c*) *ὡς γνῶ χωομένοιο.* (*b*) Parse the following words, giving the principal parts of the verbs :—*τέταντο, ὦσαν, βλῆτο, κεκάδοντο, ὀχθησιν, ἔπληντο, εἶο, ἴει, δόμεν, βίηφιν, κατέκταν, ἑστᾶσι, ἄγεν, ἐδυν.*

5. Translate, Arrian, Book III. :—

(*c*) *Καὶ ἐν τούτῳ τὰ ἅρματα τὰ δρεπανηφόρα ἐφῆκαν οἱ βάρβαροι κατ' αὐτὸν Ἀλέξανδρον, ὡς ἀναταράξοντες αὐτῷ τὴν φάλαγγα. καὶ ταύτῃ μάλιστα ἐψεύσθησαν· τὰ μὲν γὰρ εὐθὺς ὡς προσεφέρετο κατηκόντισαν οἵ τε Ἀγριᾶνες καὶ οἱ ξὺν Βαλάκρῳ ἀκοντισταὶ οἱ προτεταγμένοι τῆς ἵππου τῶν ἑταίρων· τὰ δὲ τῶν ῥυτήρων ἀντιλαμβανόμενοι τούς τε ἀναβάτας κατέσπων καὶ τοὺς ἵππους περιϊστάμενοι ἔκοπτον. ἔστι δὲ ἃ καὶ διεξέπεσε διὰ τῶν τάξεων· διέσχον γάρ, ὥστερ παρήγγελτο αὐτοῖς, ἵνα προσέπιπτε τὰ ἅρματα· καὶ ταύτῃ μάλιστα ξυνέβη αὐτά τε σῶα καὶ οἷς ἐπηλάθη ἀβλαβεῖς διελθεῖν· ἀλλὰ καὶ τούτων οἵ τε ἱπποκόμοι τῆς Ἀλεξάνδρου στρατιᾶς καὶ οἱ ὑπασπισταὶ σὶ βασιλικοὶ ἐκράτησαν.*

6. Translate the following ;—(*a*) *ὅτι οὐκ ἀσφαλές οἱ ἐφαίνετο ἑνί ἐπιτρέψαι ἀρχειν Αἰγύπτου πάσης.* (*b*) *τῆς σελήνης τὸ πολὺ ἐκλιπὲς ἐγένετο.* (*c*) *νύκτωρ παρῆνει ἐπιθέσθαι τοῖς Πέρσαις.* (*d*) *ἐς ἐπικαμπὴν δέ εἴ που ἀνάγκη καταλαμβάνοι ἢ ἀναπτύξαι ἢ ξυγκλεῖσαι τὴν φάλαγγα.* (*e*) *ἔαλω γὰρ ὕστερον ἡ τάξις ἥντινα ἔταξε Δαρεῖος γεγραμμένη.*

7. (*a*) Give 1st person sing. of the 1st Fut. and Perf. Indic. of *ἀφικνέομαι* : the paradigm of the 2nd Aor. Middle of *ἀνατίθημι*, and of the 2nd Aor Pass. of *βλάπτω*, and of the 1st Aor. Pass. of *τάττω*. (*b*) Parse :–*ἦει, λάθων, ἐτράπετο, κατανεῖμαι, ἐάλωσαν, καταπεπηγότες, ἐπίθοιντο*. (*c*) Compare :–*εὐδαίμων, ἀσφάλης, κοῦφος, ταχύς, ὀλίγος, ἀλγεινός*, and give the *Gen. Sing.* and *Dat. Plur.* of *ποῦς, πόλις, νεώς, κέρας, ὁδοίς* and *τέρας*.

8. (*a*) What is the usage in Greek with respect to Adverbs from Comparatives and Superlatives. (*b*) Give the Greek for *this, that yonder, this here, who* (Rel.), *whoever, any one, one or other* (of two), and state how the Possessive Pronoun of the 3rd Person is rendered in Greek.

9. (*a*) What is meant by Attraction? Give any instance of it. (*b*) Distinguish between *οὐ* and *μή*, and state with what Moods they are used. (*c*) What Cases in Greek are used absolutely ? (*d*) Mention in how many ways you can express a purpose.

10. (*a*) Give the ordinary meaning of the Subj., Opt., and Imper. Moods, and shew their use in indirect sentences. (*b*) What cases follow *ἐπί, ἐν, σύν, διά, ἀπό* and *ἀνά* ? (*c*) Put into Greek :—(1) They said that they were there to see the battle. (2) Cyrus commanded the army with three others. (3) The enemies were riding along at full speed.

FRENCH.

Examiners, ... { P. J. Darey, LL.D., Officier d'Académie.
Rev. D. Coussirat, B.D., Officier d'Académie.

Translate into English :—

1. Un matin (*a*) je cachai (*b*) sous mon habit le petit manuscrit relié en carton vert ; il contenait les poésies, ma dernière espérance. Je m'acheminai, en hésitant et en chancelant souvent dans mon dessein, (*c*) vers la maison d'un célèbre éditeur, dont le nom est associé à la gloire des lettres et de la librairie française, M. Didot. Ce nom m'attira le premier, parce que, indépendamment de sa célébrité comme éditeur, M. Didot était de plus un écrivain assez considéré alors. (*d*). Il avait publié ses propres vers (*e*) avec tout le luxe et le retentissement d'un poète qui possède les voix de sa propre renommée. Arrivé rue Jacob, à la porte de M. Didot, porte tapissée de gloires, il me fallut un redoublement d'efforts sur moi pour franchir le seuil, un autre pour monter l'escalier, un autre enfin plus violent encore pour sonner à la porte de son cabinet. Mais je voyais derrière moi le visage adoré de Julie qui m'encourageait (*f*) et sa main qui me poussait. J'osai tout.

Lamartine. *Les méditations jugées par M. Didot.*

2. *a.* State the difference between: *matin, matinée; jour, journée.*

b. Explain why the *Preterite Definite* is used and not the *Imperfect*, and state the difference between those two tenses.

c and e. Translate the homonyms *dessein* and *dessin*. *Vers, vert, ver, verre, vers.*

d. Substitute *nous* instead of *je* in the first line, and write in the plural the three first sentences of the above extract.

f. Account for the *e* after the *g* in encourageait. State the rule.

3. Write the following sentences in the feminine, writing *fille* instead *garçon*, and *femmes* instead *hommes*, and give the rules for the formation of the feminine of the adjectives: Un petit garçon vif, étourdi, léger, ne fera que peu de progrès dans ses études. Il existe encore de ces hommes francs, bons, honnêtes, ouverts aux plus vives impressions de la vertu excellents par nature, généreux sans songer au retour, heureux du bien qu'ils font, du bonheur qu'ils procurent.

4. Write in full the *Imperfect Indicative, the Preterite anterior and the Present Subjunctive* of *mourir, venir, connaître, être* and *vivre.*

5. Write correctly the past participles of the following sentences and give the rules:—Vous avez *vu* les belles pommes que nous *avons cueilli.* Cette chanson est charmante je l'*ai entendu* chanter. Le peu d'attention qu'il *a fait* à ses devoirs l'a fait échouer dans ses examens. Les quatre heures qu'il *a dormi* lui ont fait beaucoup de bien.

6. Translate into French:

A family feast had gathered together in that hospitable house all the relations, all the friends, and the neighbours who lived in the numerous castles of the neighbourhood. After dinner, the bad weather brought in the guests in the parlours. A brilliant society, which had hoped to enjoy the pleasures of the country, was there in idleness. They had a little music, then they proposed to improvise a family ball, to occupy the young people and the children.

GERMAN.

Examiner,.....C. F. A. Markgraf, M.A.

1. Translate into English:—

(A).....„Siehst du denn nicht den Sirius leuchten? Er stehet in dieser Jahreszeit g'rade über unserm Dorfe. Wohlan, wir müssen uns zur Rechten wenden, dann werden wir noch heute die Heimath erreichen." Da staunte Emil und sagte: „Das hätte ich doch nimmer gedacht, daß wir unsern Weg am Himmel finden würden!"

Und der Vater antwortete: „Der Wandersmann kann der Sterne nicht entbehren in der dunkeln Nacht, sie sind ihm die Führer seines Weges und leiten ihn, wann er sich verirret hat, wieder zu dem gesuchten Ziele. Ich will dich die Zahl und den Gang dieser himmlischen Lichter lehren, daß du sicher einhergehest auf deinen Pfaden, wann ich nicht mehr dein Führer bin Und bald will ich dir noch andere Sterne zeigen; du kannst sie nicht sehen mit dem Auge des Leibes, aber im Geiste sollst du sie schauen, und sie sollen dich sicher hinüberleiten zur himmlischen Heimath."

I. H. C. Nonne, Die leuchtenden Sterne.

(B) „Seht mein Land in üpp'ger Fülle,"
Sprach der Kurfürst von dem Rhein,
„Goldne Saaten in den Thälern,
Auf den Bergen edlen Wein!"

„Große Städte, reiche Klöster,"
Ludwig, Herr zu Baiern, sprach,
„Schaffen, daß mein Land den euren
Wohl nicht steht an Schänen nach."

Eberhard, der mit dem Barte,
Würtemberg's geliebter Herr,
Sprach: „Mein Land hat kleine Städte,
Trägt nicht Berge silberschwer.

Doch ein Kleinod hält's verborgen,
Daß in Wäldern noch so groß
Ich mein Haupt kann kühnlich legen
Jedem Unterthan in Schooß."

Und es rief der Herr von Sachsen,
Der von Baiern, der vom Rhei:
‚Graf im Bart, ihr seid der reichste!
Euer Land trägt Edelstein."

Kerner, Der reichste Fürst.

2. (See Ext. A. & B) (*a*) State the cases in the following expressions:—in dieser Jahreszeit; über unserm Dorfe; am Himmel; in der dunkeln Nacht; zu dem gesuchten Ziele; auf deinen Pfaden; mit dem Auge; im Geiste; in üppiger Fülle; in den Thälern; in Wäldern; vom Rhein; im Bart.—Explain the forms am, vom, im. (*b*) Give the other cases Sing. and the Nom. Plu. of:—unserm Dorfe; der dunkeln Nacht; edlen Wein. (*c*) Give the other cases Plu. and the Nom. Sing. of:— dieser himmlischen Lichter; den Bergen; große Städte.

3. (See Ext. A & B) Parse the following verbs, and give their Present Infinitives:—ſiehſt, müſſen, werden erreichen, ſtaunte, antwortete, gedacht, ſich verirrt hat, will, einhergeheſt, kannſt, ſollſt, ſeht, ſprach, ſteht nach, trägt, hält, rief, ſeid.

4. State distinctly the rules relating to the modification of the radical vowel in the Plural of substantives.

5. Give the meaning and derivation, with full explanation of the several forms, of:—ſchwächer, kürzeſt, höherem, Lüftchen, Plätzchen, am ſchärfſten, Röslein, Königinnen, hölzerner, nächſtes, Knäblein, gläſern.

6. (*a*) When are *this* and *that* expressed by dies and das? (*b*) Show the difference between the conjunctions aber and ſondern. How is *but* rendered in: not only—but also? (*c*) Write in full letters:—301, 761, 8092.

7. Translate:—The son and daughter are at home. She is going to her friends. Are they reading or writing? I like to learn. We bought (Perf.) three pounds of tea and ten ells of cloth. To-day is the third of June. Four times eight are thirty-two.

8. Write out the 3rd Sing. and 2nd Plural of the six tenses of the Indicative active of:—erlauben and wegſetzen.

9. Translate into English:—

Die Sitten einiger Völker ſind noch ſehr barbariſch. Glänzende Feſte nehmen zuweilen ein trauriges Ende. Ich gebe immer der nützlichſten Sache den Vorzug. Man hatte die Reichtümer dieſes Mannes nicht gekannt. Wer hat nach mir gefragt? Es iſt der Diener Ihres Bruders; er wartet ſchon eine Stunde lang; denn er hat Ihnen etwas Wichtiges zu ſagen. Der Tiſchler hat verſprochen, die neugekauften Möbel dieſen Nachmittag zu ſchicken. Schiller iſt im Anfange dieſes Jahrhunderts geſtorben. Die Dame führte uns in den großen Saal, um uns ihre alten Familienbilder zu zeigen. Der Arzt hat meinem kranken Onkel den Rat gegeben, Seebäder zu brauchen. Wie viel haſt du dem Handwerker für ſeine Arbeit bezahlt? Unſere Vettern ſind vor zwei Tagen mit dem Dampfſchiffe nach Europa abgereiſt.

GEOMETRY.

Examiners,..... ..... { Rev. Principal Adams, M.A.
G. H. Chandler, M.A.

1. The angles at the base of an isosceles triangle are equal.

2. Describe a triangle of which the sides shall be equal to three given straight lines, any two of which are together greater than the third.

3. The three angles of any triangle are together equal to two right angles.

Describe a right-angled triangle which shall have its hypotenuse equal to a given line and the sum of its sides equal to another given line.

4. Parallelograms on equal bases and between the same parallels are equal in area.

5. Describe a parallelogram which shall be equal to a given rectilineal figure and have one of its angles equal to a given angle.

6. If a straight line be divided into any two parts, the rectangle contained by the whole and one of the parts is equal to the rectangle contained by the two parts, together with the square on the aforesaid part.

7. Divide a given straight line into two parts so that the rectangle contained by the whole and one of the parts may be equal to the square on the other part.

8. If one circle touch another internally, the centre of the inner circle shall be in the straight line joining the centre of the outer circle to the point of contact.

9. The angle at the centre of a circle is double of the angle at the circumference standing on the same arc.

10. If from a point without a circle there be drawn two straight lines one of which cuts the circle, and the other meets it, and if the rectangle contained by the whole line which cuts the circle and the part without the circle be equal to the square on the line which meets the circle, the line which meets the circle shall touch it.

ALGEBRA.

Examiners,..... { REV. PRINCIPAL ADAMS, M.A
G. H. CHANDLER, M.A.

1. Form the square of $x^2 - 6x + 7$, and verify your work by taking the square root of the result.

2. Divide $x^5 + y^5$ by $x^2 - xy + y^2$, giving the remainder. From your work verify this general statement:

"Dividend = divisor times quotient + remainder."

3. Give the factors of $k^2 - l^2$, $k^3 + l^3$, $k^3 - l^3$, $k^4 + k^2 l_2 + l^4$.

4 Simplify:

$$\frac{3xy-4}{x^2 y^2} - \frac{5y^2+7}{xy^3} - \frac{6x^2-11}{x^3 y}.$$

5. Find the sum, difference, product and quotient of $(a-b)$ and $(b-a)$.

6. Solve the equations :

(*i*) $\dfrac{2x+7}{7} - \dfrac{9x-8}{11} = \dfrac{x-11}{2}$,

(*ii*) $\cdot 125x + \cdot 01\,x = 13 - \cdot 2x + \cdot 4$,

(*iii*) $\left\{\begin{array}{l} x - \dfrac{y-2}{7} = 5, \\ 4y - \dfrac{x+10}{3} = 3. \end{array}\right.$

7. Divide $ax^2 + bx + c$ by $x-h$, and hence find a relation connecting a, b, c, and h, which will render $ax^2 + bx + c$, divisible by $x-h$.

8. The sum of the two digits of a number is 8 ; if 18 be subtracted from the number the digits are reversed ; find the number.

9. Reduce to lowest terms :

$$\frac{x^2-2x-3}{x^2-10x+21} \quad \text{and} \quad \frac{a_3+4a^2-5}{a^3-3a+2}.$$

10. A sum of money put out at simple interest amounted in 10 months to \$5250, and in 18 months to \$5450 ; what was the sum and the rate of interest ?

TRIGONOMETRY.

Examiners, ... { Rev. Principal Adams, M.A.
G. H. Chandler, M.A.

1. A triangle has for its sides 3,4,5 ; having proved that it must be right-angled, find the six trigonometrical ratios of its three angles.

2. Prove that $\sin 30° = \cos 60° = \frac{1}{2} = \cos^2 45°$.

3. Find the sine, cosine, and tangent of 15°.

4. Prove that $\tan (A+B) = \dfrac{\tan A + \tan B}{1 - \tan A \tan B}$,

and employ this formula to deduce $\tan 60°$ from $\tan 30°$.

5. From known values of 1 and of cos 2 A, deduce that

$$1 + \cos 2A = 2\cos^2 A,\quad 1 - \cos 2A = 2\sin^2 A,$$

And show that $\cos 2\phi = \dfrac{1 - \tan^2\phi}{1 + \tan^2\phi}$

6. Express in degrees and in grades the angle of a regular pentagon, and the angle of a regular hexagon.

7. Show that

$$\sin(180° - A) = \sin A = -\sin(-A) = -\sin(180° + A)$$
$$= -\cos(90° + A) = \cos(90° - A) = \cos(270° + A).$$

8. Find the height of a tower which subtends an angle of 30° at a distance 1000 feet from its base.

GEOMETRICAL AND FREEHAND DRAWING.

Examiner,.....C. H. McLeod, Ma.E.

1. Find a fourth proportional to three given lines.

2. Construct an isosceles triangle of 2 in. area, on a base 2 in. long.

3. There are three squares the sides of which are respectively 2 in., 3 in., and 4 in.; find the side of a square which has an area equal to the sum of the areas of the three squares.

4. There is a circle and a line without the circle; draw a tangent to the circle parallel to the line. By a chord parallel to the line, cut from the circle a segment to contain an angle of 30°.

5. The principal diameters of an ellipse are 3 in. and 2 in., find the foci.

6. Describe a portion of the involute of a circle of 2 in. diameter.

7. Show the perspective of two parallel lines of infinite length, (*a*) below the level of the eye and to the right, (*b*) above the level of the eye and to the left of the spectator.

8. Make a freehand drawing of the object before you.

(*a*) A skeleton cube.

(*b*) The model of shafting pulleys and strap as it appears from your point of view.

Note.—No mechanical measurements will be allowed in problems 8 (*a*) and (*b*). In the Geometrical problems, construction lines are to be dotted and all results are to be obtained by direct construction, not by trial. A protractor must not be used to measure angles.

ENGLISH LANGUAGE.

Examiners, ... { PROF. G. CORNISH, LL.D. / PROF. A. C. SCARTH, M.A. / PROF. P. C. READ, M.A. / R. W. BOODLE, B. A.

1. Give the main outlines of Peile's classification of languages of the Amalgamating type. In which tongues were the Old and New Testaments, Eddas, Koran, Luther's and Ulfilas's Bibles written?

2. Give the original forms of the personal suffixes of the Indo-European verb. In what language are they found most exactly? Where was it spoken? Give a list of the Indo-European cases.

3. "Etymologically there is no difference between adverbs, prepositions, and conjunctions." (Explain why). "They can be to some extent interchanged." Illustrate by different uses of *as* and *but*.

4. Explain with instances, Ideography, Strong and Weak Verbs, Assimilation, Phonetic Spelling, Synthetic Language, Compensation, Duplicate words.

5. Give *three* English words due to each of the following sources:—Arabs, Norse Settlements, Teutonic Demonology, Kelts.

6. Illustrate by *two* examples of each the tendency in language (1) to use "fair words for ugly things," (2) to name *things* after *places*, (3) to retain an old word though strictly no longer applicable, (4) to efface the derivation of words.

7. Write short notes upon the following words:—Apocryphal, Charing Cross, children, cicerone, copperhead, derrick, Euxine, gipsy, Gulf of Lyons, knave, mob, sound.

8. Comment upon the following pairs:—*pelligrino* and *outlandish*, *marshal* and *alderman*, *astronomy* and *astrology*, *genuine* and *authentic*, *instruction* and *education*; *synonyn* and *homonym*, *mais* and *but*, *carl* and *churl*.

9. Write out with accents the following verses:—

> "The mighty master smil'd to see
> That love was in the next degree;
> .....
> Softly sweet in Lydian measures,
> Soon he sooth'd his soul to pleasures."

Distinguish the first couplet from the second, and say by what names they are respectively called.

ENGLISH LITERATURE.

Examiners,..... { Prof. G. Cornish, LL.D.
Prof. A. G. Scarth, M.A.
Prof. P. C. Read, M.A.
R. W. Boodle, B.A.

1. What is Literature? Describe its two main divisions. Who wrote the first true English poem?

2. Who wrote "Piers the Plowman?" Give the outlines of it.

3. Mention the peculiar elements of Scotch Poetry: name any four of the earlier Scottish poets, and one work of each.

4. Give a short account of Edmund Spencer, with a description of the "Faerie Queene."

5. Name any one work of the following authors; Richardson, Fielding, Goldsmith, Boswell, Ramsay, Thompson, Crabbe, Cowper, Wordsworth, Coleridge.

5. During which period of Shakespear's life was Julius Cæsar written? Which others of his writings belong to this period, and what are the special features therein painted?

7. "O let us have him; for his silver hairs
Will purchase us a good opinion
And buy men's voices to commend our deeds."

To whom do these lines refer? Was he engaged in the conspiracy?

8. "Coming from Sardis, on our former ensign
Two mighty eagles fell, and there they perched."

What is the circumstance referred to?

9. In what does the peculiar charm of The Lady of the Lake consist? Into how many Cantos is it divided? Give the outline of the fifth.

10. "The Western waves of ebbing day
Rolled o'er the glen their level way,
Each purple peak, each flinty spire
Was bathed in floods of living fire."

Of what part of Scotland is this the description? What remarks have you to make with regard to it?

11. Explain—Dingle, Be-shrew, Brae, Witch Elm, Placket?

HISTORY.

Examiners,..... { Prof. G. Cornish, LL.D.
Prof. A. C. Scarth, M.A.
Prof. P. C. Read, M.A.
R. W. Boodle, B.A.

1. Explain clearly the following events, mentioning their antecedents and results, and the centuries in which the events occurred: Crusades, Foundation of the Roman Empire, French Revolution, Reformation, Reforms of Kleisthenes.

2. In regard to the following wars, state (1) the contending parties, (2) the points at issue, (3) their grand result, (4) two battles in each, (5) the century of the wars: Peloponnesian, Second Punic, Seven Years, Swiss Wars of Independence, Thirty Years.

3. Who, in what century, and on what occasion, are said to have made use of the following words:

(1) A few more such victories, and I am ruined.

(2) Athens must be freed.

(3) Eat of this food, for I have eaten of it myself.

(4) God has given it to me; woe to him who shall attempt to lay hands on it.

(5) Here I take my stand; I can do no otherwise.

(6) I came, I saw, I conquered.

(7) If it takes place at Paris, the wedding favours will be crimson.

(8) It is the will of God.

(9) Varus, Varus, give me back my legions.

(10) Who ought to be king; the man with the power, or the man with only the name?

4. In what centuries did the following live, with what great event were they severally connected, and what part did they take in it:—Attila, Belisarius, Constantine, Demosthenes, Epaminondas, Regulus, Themistocles, Titus, William the Silent, Gregory, Otho and Peter the Great?

5. Explain the following terms clearly and concisely:—Barbarian, Capuchin, Cid, Demagogue, Dictator, Ephor, Gladiator, le Grand Monarque, Thundering Legion, Triumvirate, Viking.

6. What great events occurred in the following years: B.C. 490, 330, 146 102, A.D. 325, 622, 1347, 1453, 1482, 1685, 1763, 1848?

7. Write some account of Greece in the Homeric Poems, *or* Darius' Scythian Expedition.

8. Give the story of the Foundation of Rome, *or* an account of Cataline's Conspiracy.

9. Describe Napoleon's Russian Campaign, *or* Columbus' first Voyage to America.

10. Mention *seven* distinguished writers (*not* British or American), the country they lived in, and one of their works, *or* describe the state of France before the Revolution.

GEOGRAPHY.

Examiners,..... { Prof. G. Cornish, LL.D.
Prof. A. Scarth, M.A.
Prof. P. C. Read, M.A.
R. W. Boodle, B.A.

1. What is meant by:—Equinox, ecliptic, axis, doldrums, moraine, etesian, nullah, reef, nadir?

2. Mention the divisions of Australia, with their chief towns.

3. Mention all the East Indian Islands you know, stating how each is governed.

4. Through what points would a straight line pass, drawn from Point de Galle to Herat?

5. What are the chief exports of Holland, Brazil, Ceylon and Greece?

6. Write a short account of China and Japan, mentioning any recent changes made in those countries.

7. Give approximately the area and elevation of the great Canadian lakes.

8. Where are:—Port Arthur, Sault Ste. Marie, Yale, Battleford, Auckland, Honolulu, Heligoland, Panama, Tahiti, Cairo, Socotra, Herat, Galway, Penang? For what are any of these remarkable?

9. Describe the origin of Geysers.

10. Which is the heavier, salt or fresh water? What are the causes and results of the difference?

11. Describe accurately the divisions of South America, with the chief products of each.

12. What are the chief rivers of Siberia? Are they commercially important?

BOTANY.

Examiner, ... D. P. PENHALLOW, B.Sc.

1. Explain the characteristics of a Gymnospermous plant. Examples.

2. Give the principal divisions of the natural system of classification.

3. Describe the parts of a complete flower.

4. Explain the application of the terms, annual, biennial, perennial. Examples.

5. What kinds of fruit are the apple, peach and grape? Explain the difference.

6. What is a raceme?

7. Give the principal characteristics of the Dicotyledons. Examples.

8. What is a spathe, and where found?

9. Describe the plant given, and show to what family it belongs.

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*The examiner will please supply any common flower.

ELEMENTARY CHEMISTRY.

Examiner,..... .....B. J. HARRINGTON, B.A., PH.D.

1. How would you prove experimentally that when a candle burns the matter of which it is composed is not destroyed?

2. Explain the terms element and atomic weight. Give also the symbol and atomic weight of each of the following:—Carbon, Chlorine, Nitrogen, Phosphorus, Sulphur.

3. What salts are most frequently present in spring water? How may the quantity of solid matter in waters be determined?

4. Give fully the properties of ammonia.

5. State what you know with regard to the occurrence of Phosphorus in nature. How is ordinary Phosphorus prepared?

6. What are Hydrocarbons? Give the preparations and properties of one of them.

7. Describe the preparation of Nitric Acid, giving a sketch of the apparatus which you would employ.

8. What weight of Phosphoric Anhydride can be obtained by burning 10 grammes of Phosphorus in Oxygen?

9. How would you distinguish a Chloride from a Sulphate and a Bromide from an Iodide?

10. Write equations to indicate the changes which take place (*a*) when Hydrochloric Acid is poured upon Marble, and (*b*) when Common Salt and Sulphuric Acid are heated together.

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